



TOPCON QS

catalog 2011

CLEARY

MACHINERY CO., INC

LASERS SURVEY GPS MACHINE CONTROL

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Topcon IS Series

imaging/scanning/robotic system

IS-1" accuracy
IS-3" accuracy



The New Image of Surveying

Some products define an era. Others create a new one. The new Topcon IS scanning, robotic, reflectorless imaging station is that product. Its only limit is your imagination.

Topcon's IS combines the best of two worlds, advanced imaging and high-accuracy surveying, incorporating real-time field imagery with spatial data. The IS's powerful functionality is controlled using Topcon's exclusive ImageMaster software that produces "photography with dimension", a revolutionary and cost effective alternative to laser scanning. Reality captured for results unimaginable.

Imaging Station Series Features:

- * IntelligentScan automatically recognizes significant features in the images. Its 20 pps scan rate is ideal for most applications, and its 2000m precision reflectorless range is tops in its class.
- * ImageDrive lets you visually operate from the controller and easily switch from imaging to prism tracking.
- * First with Independent Control to allow complete control from your computer, WiFi-equipped FC-2200, and other compatible devices.
- * Integrated dual-camera array with wide-area and 30x scope view so you can zoom in on the detail you need.

A Robot at Heart;

The IS doesn't forsake its robotic roots. The IS has all the features of our GPT-9000A robotic total station and more.

Our 9000A series robotic system features sophisticated technology unique to Topcon—our one-touch quick lock feature that set the standard in robotic target acquisition has taken another step forward, with the sleek new RC-3 system. All 9000A series robotic systems offer reflectorless measurement superior to any other instrument available—capable of precision measurements at a mind-boggling 2000 meters! Packed with a wide variety of advanced technologies, the Topcon GPT-9000A series robotic total station demonstrates why Topcon continues to be the world's leader in precision survey instrumentation:

- * Innovative, completely cable-free system design
- * Superior X-TRACi Quick-Lock tracking technology
- * Full-color, graphical Windows Mobile instrument & field controller interface
- * The most advanced, longest range, and most powerful reflectorless technology available
- * Integrated interference free 2.4 GHz SpSp robotic data communications

Reflectorless



Accessories:

- 60487 BT-65Q Lithium-Ion battery pack
- 60241 BC-30B 110V charger
- 60243 F-25 USB cable

specifications

Tracking

- Turning speed 85 degrees/sec
- Tracking speed 15 degrees/sec
- Tracking range 26 to 3,280 feet, 8 to 1000 meters
- Tracking accuracy 2"

Telescope

- Length 165 Millimeters
- Objective Lens Diameter 45mm(EDM:50mm)
- Magnification 30x
- Image Erect
- Field of View 1° 30'
- Resolve Power 3.0"
- Min. Focus Distance 1.3 meters

Measurement Range

- 1 Prism 9840 ft, 3000 meters
- Non Prism 6500 ft, 2000 meters

Measuring Accuracy

- Prism Mode $\pm(2\text{mm}+2\text{ppm}\times D^*)$ m.s.e. fine
- Non Prism Mode $\pm(5\text{mm})$ m.s.e. fine ($>25\text{m}$),
- Long range $\pm(10\text{mm}+10\text{ppm})$ fine
- Minimum reading 1mm(0.005ft.)/0.2mm(0.001ft.) fine
- Measurement time 1.2 sec.(Initial 3.0 sec.) fine

Angle Measurement

- Method Absolute
- Detection 2 sides horizontal, 2 side vertical
- Minimum reading 0.5"/1" arc sec, 0.1/0.5 mgon
- Accuracy 1" to 5" (see models)
- Diameter of Circle 71 Millimeters

Computer Unit

- Operating system Windows CE-NET 4.2
- Processor Intel PXA255 400 Mhz
- RAM 64MB
- Display 320x240 (QVGA) graphic LCD TFT color touch screen
- Card system Compact flash

Imaging

- Cameras (2) 1.3mp
- Image Speed 1 to 10 fps
- Scanning Max 20 points/second

Power

- Source BT-65Q Lithium-Ion
- Capacity 5000 mAh
- approximate battery life 4.5 hours including distance measurement

Battery Charger

- ID BC-30B
- Recharging time 5.0 Hours

TOTAL STATIONS

QS Series

The QS Series Quick Station

reflectorless/wireless robotic system

QS 1"
QS 3"
QS 5"



Jobsite demands are constantly changing. Adopting and utilizing the very best technology innovations for your business enables you to increase your productivity and profitability like never before.

Robotic instrument technology and the significant performance advantages it can offer have changed the way topography and layout tasks are completed worldwide. Through Topcon's leadership and experience in optical instrumentation that spans more than 70 years, we have the know-how to design and build the very best robotics systems available. Topcon is now on its 8th generation of robotic instrument technology.

With a modern, cable-free design, the QS Series offers the most advanced robotic technology available. The QS Series Robotic System features sophisticated technology unique to Topcon. Our one-touch Quick Lock feature that set the standard in robotic target acquisition has taken another step forward with X-TRAC 8, a superior technology solution for strong tracking and quick re-acquisition in challenging environments.

Available in 1, 3, and 5 second angle accuracies, you can select the instrument that best fits your requirements. All QS Series Robotic Systems offer reflectorless measurement superior to any other instrument available - capable of precision measurements at a mind-boggling 6,500 ft. (2,000m)!

Topcon's new QS Series Robotic Systems: Superior Technology - Superior Design - Superior Performance and Value only from Topcon, the World Leader in Precision Measurement Technology.

Reflectorless



XTRAC8



RC-4

The new dual-laser system features:

- * Wide-area aiming for faster QuickLock
- * Integrated 2.4GHz radio simplifies communication with all Topcon field controllers
- * Extended radio range
- * Multi-channel support



Accessories:
60487 BT-65Q Lithium-Ion battery pack
60241 BC-30B 110V charger
60243 F-25 USB cable

specifications

ANGLE MEASUREMENT

Method Absolute Reading

Horizontal 2 sides

Vertical 2 sides

Minimum Reading

QS1

0.5"/1" (0.1/0.5mgon)

QS3

1"/5" (0.2/1mgon)

QS5

1"/5" (0.2/1mgon)

Accuracy

QS1

1" (0.3mgon)

QS3

3" (1mgon)

QS5

5" (1.5mgon)

Tilt Correction Dual Axis

Compensating Range $\pm 6'$

DISTANCE MEASUREMENT

1 prism 9,840' (3,000m)

3 prism 13,120' (4,000m)

9 prism 16,400' (5,000m)

Non-Prism Mode 4.9' - 820' (1.5m - 250m)

Non-Prism Long Mode 16.4' - 6,500' (5.0m - 2,000m)

MEASUREMENT ACCURACY

Prism Mode Fine 0.2mm / 1mm \pm (2mm+2ppmxD) m.s.e.

Coarse 1mm \pm (7mm+2ppmxD) m.s.e.

Coarse 10mm \pm (10mm+2ppmxD) m.s.e.

Non-Prism Mode Fine 0.2mm / 1mm \pm (5mm) m.s.e.

Coarse 1mm / 10mm \pm (10mm) m.s.e.

Non-Prism Long Mode Fine 1mm \pm (10mm+10ppmxD) m.s.e.

Coarse 5mm \pm (20mm+10ppmxD) m.s.e.

Coarse 10mm \pm (100mm) m.s.e.

USER INTERFACE

OS Microsoft Windows® CE.NET 4.2

Processor Intel PXA255 400MHz

Screen Full Color Touch-screen



GPT-7500 Series reflectorless/Windows CE

GPT-7501
GPT-7503
GPT-7505



As the world leader in precise positioning solutions, Topcon has a tradition of bringing innovative technology to the jobsite. The GPT-7500 series total stations continue this tradition by providing advanced reflectorless technology in addition to a convenient built-in Windows CE.NET operating system and large, full color graphic display with touch screen!

Advanced Long Range Prismless Measurement Capability - The GPT-7500 series gives you up to 2000m reflectorless range, the longest in its class! Measure up to 3000m with a prism. The unique dual optical EDM design takes pulse laser reflectorless measurement to a higher level. Even at long distances, it maintains focused beam accuracy and allows you to measure only the target you select.

Windows CE technology on the GPT-7500 total station provides a bright graphic display, touch screen display, more functionality, better support for standard accessories like Bluetooth wireless technology, and more available software. It provides the ideal user interface for an integrated, on-board solution for the GPT-7500 total stations.

GPT-7500 Series Features:

- Advanced Lithium-ion Battery
- Removable Compact Flash Data card
- Powerful TopSurv on-board Software



Accessories:

60487 BT-65Q Lithium-Ion battery pack
60241 BC-30B 110V charger
60243 F-25 USB cable

specifications

Telescope

Length 150 Millimeters
Objective Lens Diameter 45mm(EDM:50mm)
Magnification 30x
Image Erect
Field of View 1° 30'
Resolve Power 2.5"

Min. Focus Distance 1.3 meters

Measurement Range

1 Prism 9900 ft, 3000 meters

3 Prism 4000 meters

Non Prism 6500 ft, 2000 meters

Measuring Accuracy

Prism Mode $\pm(2\text{mm}+2\text{ppmxD}^*)$ m.s.e. fine

Non Prism Mode $\pm(5\text{mm})$ m.s.e. fine(3-25m), $\pm(2\text{mm}+2\text{ppmxD}^*)$ m.s.e. (>25m)

Minimum reading 1mm(0.005ft.)/0.2mm(0.001ft.) fine

Measurement time 3.0 sec./1.2 sec.(Initial 4.0 sec.) fine

Angle Measurement

Method Absolute

Detection 2 sides horizontal, 2 side vertical

Minimum reading 0.5"/1" arc sec, 0.1/0.5 mgon

Accuracy 1" to 5" (see models)

Diameter of Circle 71 Millimeters

Tilt Correction

Type Dual Axis

Compensating Range $\pm 4'$

Correction Unit 1" arc sec, 0.1 mgon

Computer Unit

Operating system Windows CE-NET 4.2

Processor 177 Mhz Hitachi SH7750R

RAM 64MB

Display 320x240 (QVGA) graphic LCD TFT color touch screen

Card system Compact flash

Interface RS-232 (6 pin), USB type B for ActiveSync

Environmental

Circular level sensitivity 10' / 2mm

Plate level sensitivity 30" / 2mm

Optical Plummet 3x Magnification

Dimensions (HxWxL) 13.5 (H) x 9.6 (W) x 8.6 (L) inches

Instrument Weight (with battery) 13.6 pounds, 6.2 kg

Dust/Water Protection IP54 rating

Operating Temperature -20° to +50° C, -4° to +122° F

Power

Source BT-65Q Lithium-Ion

Capacity 5000 mAh

approximate battery life 7.5 hours including distance measurement,

10 hours Angle measurement only

Battery Charger

ID BC-30B

Recharging time 4.0 Hours



GTS-750 Series

Windows CE on-board

GTS-751
GTS-753
GTS-755



TOTAL STATIONS

At Topcon efficiency and productivity are our priority. By adopting the latest Windows CE technology, Topcon brings the advantages of the GUI (Graphical User Interface) to a Total Station. Whether you are an experienced user or just a beginner, the graphical interface and intuitive design will allow you to get up and running in no time. Windows CE technology provides a bright graphic display, more functionality, better support for standard accessories and much more software available. In addition, it is easier to convert software written for other hardware. Our robust 32-bit multitasking environment allows application developers to get the best out of our modern microprocessor design.

Windows CE contains innovative functionality such as vibrant graphics and touch screen capabilities that make the user interface ideal for an integrated, on-board solution. The GTS-750 series once again demonstrates Topcon's market leadership, and we will continue to ride the wave of technology while older text-based systems are left behind.

GTS-750 Series Features:

- Built-in Windows CE.NET operating system
- Large, full color graphic display touch screen
- Advanced Lithium-Ion Battery
- Removable Compact Flash Data card
- Powerful TopSurv on-board Software



Accessories:

- 60487 BT-65Q Lithium-Ion battery pack
- 60241 BC-30B 110V charger
- 60243 F-25 USB cable

specifications

Telescope

Length 150 Millimeters
Objective Lens Diameter 45mm(EDM:50mm)
Magnification 30x
Image Erect
Field of View 1° 30'
Resolve Power 2.5"
Min. Focus Distance 1.3 meters

Measurement Range

1 Prism 9900 ft, 3000 meters
3 Prism 4000 meters
9 Prism 5000 meters

Measuring Accuracy

Prism Mode $\pm(2\text{mm}+2\text{ppmx}D^*)$ m.s.e. fine
Minimum reading 1mm(0.005ft.)/0.2mm(0.001ft.) fine
Measurement time 2.8 sec./1.2 sec.(Initial 4.0 sec.) fine

Angle Measurement

Method Absolute
Detection 2 sides horizontal, 2 side vertical
Minimum reading 0.5"/1" arc sec, 0.1/0.5 mgon
Accuracy 1" to 5" (see models)
Diameter of Circle 71 Millimeters

Tilt Correction

Type Dual Axis
Compensating Range $\pm 4'$
Correction Unit 1" arc sec, 0.1 mgon

Computer Unit

Operating system Windows CE-NET 4.2
Processor 177 Mhz Hitachi SH7750R
RAM 64MB
Display 320x240 (QVGA) graphic LCD TFT color touch screen
Card system Compact flash
Interface RS-232 (6 pin), USB type B for ActiveSync

Environmental

Circular level sensitivity 10' /2mm
Plate level sensitivity 30' /2mm
Optical Plummet 3x Magnification
Dimensions (HxWxL) 13.5 (H) x 9.6 (W) x 8.6 (L) inches
Instrument Weight (with battery) 13.6 pounds, 6.2 kg
Dust/Water Protection IP54 rating
Operating Temperature -20° to +50° C, -4° to +122° F

Power

Source BT-65Q Lithium-Ion
Capacity 5000 mAh
approximate battery life 7.5 hours including distance measurement, 10 hours Angle measurement only

Battery Charger

ID BC-30B
Recharging time 4.0 Hours
Operating temperature 0° to +40° Celsius, 32° to 104° Fahrenheit



GPT-7000i Series

reflectorless/Windows CE/digital camera

GPT-7001i
GPT-7002i
GPT-7003i
GPT-7005i



Capture reality – don't just measure it! With its integrated digital camera technology, the Topcon GPT-7000i imaging total station makes your field data come alive. Captured job site photos are incorporated into your measurement data, or use the onboard imaging technology to superimpose design points or stakeout points. By adding optional digital imaging software you can combine multiple job site photos and create 3D models and point clouds! Never miss a required shot again! The GPT-7000i series gives you up to 250m reflectorless range, the longest in its class! Measure up to 3000m with a prism. The unique dual optical EDM design takes pulse laser reflectorless measurement to a higher level. Even at long distances, it maintains focused beam accuracy and allows you to measure only the target you select.

Topcon's GPT-7000i is a World's First imaging total station. It contains an integrated camera that allows you to visually map measurements to job site photographs. With additional software you can create 3D point clouds and stereoscopic images. For high performance surveying, get Topcon.

GPT-7000i Series Features:

- Dual-view integrated CCD camera: wide and finder view
- Windows CE.NET 4.2 operating system
- Extra-large QVGA LCD TFT color display
- Pinpoint reflectorless measuring up to 250m



Reflectorless



**CAPTURE
REALITY**

Accessories:

60244 BT-61Q Lithium-Ion battery pack
60241 BC-30B 110V charger
60243 F-25 USB cable

specifications

Telescope

Length 150 Millimeters
Objective Lens Diameter 45mm(EDM:50mm)
Magnification 30x
Image Erect
Field of View 1° 30'
Resolve Power 2.8"
Min. Focus Distance 2.0 meters

Camera

Number of effective pixels 640 x 480 (VGA)
Digital zoom magnifications 0.25, 0.5, 1.0, 2.0
Minimum focusing distance 2m
Angle of View 1° telescopic or 30° wide-angle

Measurement Range

1 Prism 9900 ft, 3000 meters
Non Prism 820 ft, 250 meters

Measuring Accuracy

Prism Mode $\pm(2\text{mm}+2\text{ppmmD}^*)$ m.s.e. fine
Non Prism Mode $\pm(5\text{mm})$ m.s.e. fine(3-25m), $\pm(2\text{mm}+2\text{ppmmD}^*)$ m.s.e. (>25m)
Minimum reading 1mm(0.005ft.)/0.2mm(0.001ft.) fine
Measurement time 3.0 sec./1.2 sec.(Initial 4.0 sec.) fine

Angle Measurement

Method Absolute
Detection 2 sides horizontal, 2 side vertical
Minimum reading 0.5"/1" arc sec, 0.1/0.5 mgon
Accuracy 1" to 5" (see models)
Diameter of Circle 71 Millimeters

Tilt Correction

Type Dual Axis
Compensating Range $\pm 4'$
Correction Unit 1" arc sec, 0.1 mgon

Computer Unit

Operating system Windows CE.NET 4.2
Processor 177 Mhz Hitachi SH7750R
RAM 64MB
Display 320x240 (QVGA) graphic LCD TFT color touch screen
Card system Compact flash
Interface RS-232 (6 pin), USB type B for ActiveSync

Environmental

Circular level sensitivity 10' / 2mm
Plate level sensitivity 30" / 2mm
Optical Plummet 3x Magnification
Dimensions (HxWxL) 13.5 (H) x 9.6 (W) x 8.6 (L) inches
Instrument Weight (with battery) 13.6 pounds, 6.2 kg
Dust/Water Protection IP54 rating
Operating Temperature -20° to +50° C, -4° to +122° F

Power

Source BT-61Q Lithium-Ion
Capacity 4400 mAh

Battery Charger

ID BC-30B
Recharging time 4.0 Hours





 **Reflectorless**

GPT-7001i
GPT-7002i
GPT-7003i
GPT-7005i



Capture reality – don't just measure it! With its integrated digital camera technology, the Topcon GPT-7000i imaging total station makes your field data come alive. Captured job site photos are incorporated into your measurement data, or use the onboard imaging technology to superimpose design points or stakeout points. By adding optional digital imaging software you can combine multiple job site photos and create 3D models and point clouds! Never miss a required shot again! The GPT-7000i series gives you up to 250m reflectorless range, the longest in its class! Measure up to 3000m with a prism. The unique dual optical EDM design takes pulse laser reflectorless measurement to a higher level. Even at long distances, it maintains focused beam accuracy and allows you to measure only the target you select.

GPT-7000i Series Features:

- Dual-view integrated CCD camera: wide and finder view
- Windows CE.NET 4.2 operating system
- Extra-large QVGA LCD TFT color display
- Pinpoint reflectorless measuring up to 250M

Specifications

Telescope

Length 150 Millimeters

Magnification 30x

Camera

Number of effective pixels 640 x 480 (VGA)

Digital zoom magnifications 0.25, 0.5, 1.0, 2.0

Minimum focusing distance 2m

Measurement Range

1 Prism 9900 ft, 3000 meters

Non Prism 820 ft, 250 meters

Measuring Accuracy

Prism Mode (2mm+2ppmxD*) m.s.e. fine

Non Prism Mode (5mm) m.s.e. fine(3-25m),

(2mm+2ppmxD*) m.s.e. (>25m)

Angle Measurement

Accuracy 1" to 5" (see models)

Computer Unit

Operating system Windows CE-NET 4.2

Display 320x240 (QVGA) graphic LCD TFT color touch screen

Card system Compact flash

Interface RS-232 (6 pin), USB type B for ActiveSync

Environmental

Optical Plummet 3x Magnification

Dimensions 13.5 (H) x 9.6 (W) x 8.6 (L) inches

Instrument Weight (with battery) 13.6 pounds

GPT-7000i Series

Windows CE/digital camera

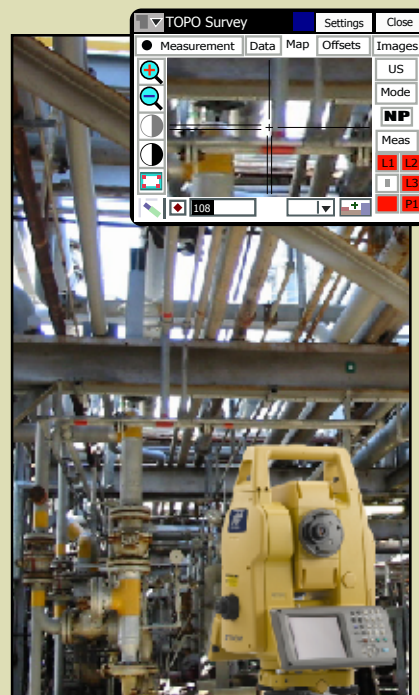
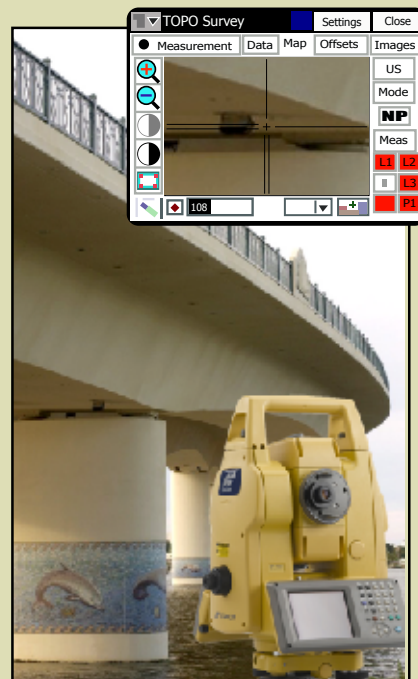
Topcon's GPT-7000i is a World's First imaging total station. It contains an integrated camera that allows you to visually map measurements to job site photographs. With additional software you can create 3D point clouds and stereoscopic images. For high performance surveying, get Topcon.

Applications for Imaging

- Archaeology
- Construction
 - As built Surveys
 - Volume calculations
 - Dimension Control
 - Monitoring
- Accident Investigation
- Crime Scene Mapping
- Disaster Management
- Heritage Surveys
- Land Survey Mapping
- Asset Management
- Quarrying
- Hazardous area surveying
- Industrial Measurement



**CAPTURE
REALITY**



CLEARY
MACHINERY CO., INC.

Phone: 800-453-7726

24 Cedar Street • So. Bound Brook
NJ 08880-1352

LASERS • SURVEY • GPS • MACHINE CONTROL

GPT-3 100W Series

reflectorless/bluetooth wireless

GPT-3 102W
GPT-3 103W
GPT-3 105W
GPT-3 107W
GPT-3002LW
GPT-3003LW
GPT-3005LW



Topcon was the first to bring a completely wireless total station to the surveying industry. Now, with the GPT-3 100W series reflectorless total stations, Topcon gives you the convenience of wireless technology on the total stations with the longest reflectorless range in their class. The GPT-3 100W series provides the highest measuring precision available due to its dual-optical design, so you get incredible results every time, in all situations.

LW = long range reflectorless
up to 1200M!

GPT-3 100W Series Features:

- **Dual-Optical Design**—Reflectorless measuring requires a finely focused beam for pinpoint accuracy. Prisms need a wider pattern to prevent off-center measuring degradation. Topcon's dual-optical system gives you both for the maximum measuring accuracy all the time.

- **Precise Pulse-Laser Reflectorless**—Topcon's pulse-laser "time-of-flight" system eliminates measuring errors caused by the overlapping signals used in phase measuring systems. Accurately measuring corners or through objects such as a chainlink fence is always fast and reliable.

- **Longest Reflectorless Range**—Up to 350m, the longest reflectorless range in its class! Measures up to 3000m with a prism. The dualoptical design allows you the extended range using a class 1 laser— safe for all conditions—making it ideal for use in high-traffic and other heavily populated areas.



specifications

Telescope

Length 150 Millimeters
Objective Lens Diameter 45mm(EDM:50mm)
Magnification 30x
Image Erect
Field of View 1° 30'
Resolve Power 2.8"
Min. Focus Distance 1.3 meters

Measurement Range

1 Prism 9900 ft, 3000 meters
Mini Prism 4920 ft, 1500 meters
Non Prism W - 1150 ft, 350 meters **LW** - 3900 ft, 1200 meters

Measuring Accuracy

Prism Mode $\pm(3\text{mm}+2\text{ppm}\times D^*)$ m.s.e. fine
Non Prism Mode $\pm(3\text{mm}+2\text{ppm} @ 25\text{m or more})$ m.s.e. fine
Minimum reading 1mm(0.005ft.)/0.2mm(0.001ft.) fine
Measurement time 1.2 sec.(Initial 3.0 sec.) fine

Angle Measurement

Method Absolute
Detection 2 sides horizontal, 2 side vertical
Minimum reading 1"/5" arc sec, 0.2/1 mgon
Accuracy 2" to 7" (see models)
Diameter of Circle 71 Millimeters

Tilt Correction

Type Dual Axis
Compensating Range $\pm 3'$
Correction Unit 1" arc sec, 0.1 mgon

Computer Unit

Interface RS-232C(6 pin) Serial, Bluetooth wireless

Environmental

Circular level sensitivity 10' /2mm
Plate level sensitivity 30' /2mm
Optical Plummet 3x Magnification
Laser Plummet LD (Visible Laser) light source, 633nm
Dimensions (HxWxL) 13.2 (H) x 7.2 (W) x 6.9 (L) inches
Instrument Weight (with battery) 11.4 pounds, 5.2 kg
Dust/Water Protection IP66 rating
Operating Temperature -20° to +50° C, -4° to +122° F

Power

Source BT-52QA
Output Voltage DC7.2 Volts
Capacity 2700 mAh
approximate battery life 4.2 hours including distance measurement, 45 hours Angle measurement only

Battery Charger

ID BC-27BR
Recharging time 1.8 Hours
Operating temperature 0° to +40° Celsius, 32° to 104° Fahrenheit

Accessories:

51730 BT-52QA NiMH battery pack
60347 BC-27BR 110V charger
60381 FC-100 128mb BT with TopSurv TS



GTS-230W Series

bluetooth wireless

GTS-233W
GTS-235W
GTS-236W
GTS-239W



Topcon's GTS-230W Series are the World's First electronic total stations to feature wireless operation! Each model in this versatile lineup can handle all surveying and construction total station needs at a remarkably low price. Four levels of angular accuracy are available to suit any application. And the rugged, waterproof/dustproof design, (IP-66), will stand up to the harshest construction site environment.

GTS-230W Series Features:

- World's first wireless total station (no cable from instrument to data collector)
- Large, easy-to-read screen
- Expanded keyboard

Like Topcon's GTS-220 Series, the GTS-230W Series is loaded with standard features including a long life 10 hour NiMH battery, a "Point Guide Feature" to allow fast alignment in staking tasks, and a laser plummet to help make setup fast and easy. Even wireless operation is standard with the GTS-230W Series, so you don't have to worry about messy cables slowing you down!



Accessories:

51730 BT-52QA NiMH battery pack
60347 BC-27BR 110V charger
60381 FC-100 128mb BT with TopSurv TS

specifications

Telescope

Length 150 Millimeters
Objective Lens Diameter 45mm(EDM:50mm)
Magnification 30x
Image Erect
Field of View 1° 30'
Resolve Power 2.5 "
Min. Focus Distance 1.3 meters

Measurement Range

1 Prism 9900 ft, 3000 meters
3 Prism 4000 meters
9 Prism 5000 meters

Measuring Accuracy

Prism Mode $\pm(2\text{mm}+2\text{ppm}\times\text{D}^*)$ m.s.e. fine
Minimum reading 1mm(0.005ft.)/0.2mm(0.001ft.) fine
Measurement time 2.8 sec/ 1.2 sec.(Initial 4.0 sec.) fine

Angle Measurement

Method Absolute
Detection 2 sides horizontal, 1 side vertical
Minimum reading 1"/5" arc sec, 0.2/1 mgon
Accuracy 3" to 9" (see models)
Diameter of Circle 71 Millimeters

Tilt Correction

Type Dual Axis
Compensating Range $\pm 3'$
Correction Unit 1" arc sec, 0.1 mgon

Computer Unit

Interface RS-232C(6 pin) Serial, Bluetooth wireless

Environmental

Circular level sensitivity 10' /2mm
Plate level sensitivity 30' /2mm
Optical Plummet 3x Magnification
Laser Plummet LD (Visible Laser) light source, 633nm
Dimensions (HxWxL) 13.2 (H) x 7.2 (W) x 6.9 (L) inches
Instrument Weight (with battery) 10.8 pounds, 5.2 kg
Dust/Water Protection IP66 rating
Operating Temperature -20° to +50° C, -4° to +122° F

Power

Source BT-52QA
Output Voltage DC7.2 Volts
Capacity 2700 mAh
approximate battery life 10 hours including distance measurement, 45 hours Angle measurement only

Battery Charger

ID BC-27BR
Recharging time 1.8 Hours
Operating temperature 0° to +40° Celsius, 32° to 104° Fahrenheit

TOTAL STATIONS



GTS-100 Series

entry level total station

GTS-102N
GTS-105N



The new Topcon GTS-100N series total station combines the traditional Topcon rugged field-ready quality and accuracy with economical, compact design that is perfect for everyday measuring and positioning applications such as topo and construction layout.

GTS-100N features:

- * Economical, value priced measuring solution
- * Rugged, durable, water resistant design
- * Two accuracies to choose from 2" & 5"
- * Expanded, Full numeric keypad
- * On board programs & 24,000 point data storage
- * Ideal as a construction stakeout total station
- * Perfect when combined with FC field controller and software

The entry-level value choice is the GTS-100N. Built with legendary Topcon precision and durability, the GTS-100N provides the construction professional with a dedicated lay-out solution. Use the on-board software to layout points in the field, confident that with Topcon, you'll be right on target. Or use any of Topcon's field controllers running one of our range of software packages tailored to the tasks you want to perform.



Accessories:

- 60537 BT-61 battery pack
- 60538 BC-G1B 110V charger

specifications

Telescope

Length 150 Millimeters
Objective Lens Diameter 45mm (EDM:50mm)
Magnification 30x
Image Erect
Field of View 1° 30'
Resolve Power 3"
Min. Focus Distance 1.3 meters

Measurement Range

1 Prism 6500 ft, 2000 meters
3 Prism 8800 ft, 2700 meters

Measuring Accuracy

Prism Mode $\pm(2\text{mm} + 2\text{ppm} \times \text{D})\text{m.s.e. fine, N/A}$
Measurement time 1mm: 1.2sec. (Initial 4sec.)

Angle Measurement

Method Absolute Reading
Detection 2 horizontal, 1 vertical
Minimum reading 1/5"

Tilt Correction

Type Single Axis
Method Liquid surface reflective profile sensor
Compensating Range $\pm 3'$
Correction Unit 1 arc sec

Computer Unit

Display 2 screen, dot matrix graphic LCD display
Power approximate battery life 9 including distance measurement, 40 Angle measurement only

TOTAL STATIONS



CTS-3000 Series

contractors reflectorless

CTS-3005
CTS-3007



The CTS-3000 series features onboard software that simplifies staking. An extended keyboard enables easy operation and data input. The system software can also be operated with a hand-held data collector, like Topcon's FC-100. Reflectorless measurement capabilities up to 250m (820 ft.) and a prism type range of 3,000m (9842 ft.) to a single standard size prism provide the range needed to cover most job sites.

CTS-3000 Features:

- CTS - Contractors Total Station
- Layout and offset measurement made easy
- Reflectorless measurement to 250m
- Easy on-board software
- Class 1, eye-safe laser
- TopField on-board software

The pinpoint reflectorless measurement function will increase the productivity and flexibility of your measurements. Use a prism or not, it's up to you. Utilize the CTS series to help you keep control on the job site. Replace lost or disturbed stakes, or use it to make spot measurements for elevations.



Accessories:

51730 BT-52QA NiMH battery pack
60347 BC-27BR 110V charger
51224 Serial data cable
60438 FC-100 128mb with TopSurv Contractors

specifications

Telescope

Length 150 Millimeters
Objective Lens Diameter 45mm(EDM:50mm)
Magnification 30X
Image Erect
Field of View 1° 30'
Resolve Power 2.8"

Measurement Range

1 Prism 9900 ft, 3000 meters
Mini Prism 6.6 - 4,920 ft, 2 - 1,500 meters
Pin Pole Prism 6.6 - 8,200 ft, 2 - 2,500 meters
Non-Prism Mode 5 - 820 ft, 1.5 - 250 meters

Measuring Accuracy

Prism Mode $\pm(3\text{mm}+2\text{ppmxD})\text{m.s.e. fine}$, $\pm(10\text{mm}+2\text{ppmxD})\text{m.s.e. coarse}$
Non-Prism Mode $\pm(10\text{mm})\text{ m.s.e. fine}(3-25\text{m})$, $\pm(3\text{mm}+2\text{ppm})\text{ m.s.e. fine}(25\text{m or more})$

Minimum reading 0.2mm(0.001ft.) / 1mm(0.005ft) fine, 1mm(0.005ft) 10mm(0.02ft.) coarse, 10mm(0.02ft.) tracking

Measurement time 1mm: 1.2 sec.(Initial 3.0 sec.)/0.2mm: 3.0 sec (Initial 4.0 sec.)

Angle Measurement

Method Absolute
Detection 2 sides horizontal, 2 sides vertical
Minimum reading 1"/5" arc sec, 0.2/1 mgon
Accuracy 5 or 7 second (see models)
Diameter of Circle 71 Millimeters

Tilt Correction

Type Single or Dual Axis
Compensating Range $\pm 3'$

Environmental

Circular level sensitivity 10' / 2mm
Plate level sensitivity 30" / 2mm
Optical Plummet 3x Magnification
Laser Plummet LD (Visible Laser) light source, 633nm
Laser Pointer LD (Visible Laser) light source, 690nm
Dimensions (HxWxL) 13.2 x 7.2 x 6.9 inches
Instrument Weight (with battery) 11.4 pounds, 5.2 kg
Dust/Water Protection IP66 rating
Operating Temperature -20° to +50° C, -4° to +122° F

Power

Source NiMH Battery BT-52Q
Output Voltage DC7.2 Volts
Capacity 2700 mAh
approximate battery life 4.2 hours including distance measurement, 45 hours Angle only

Battery Charger

ID BC-27
Recharging time 1.8 Hours
Operating temperature +10° to +40° C, +50° to +104° F

TOTAL STATIONS



prisms, tribrachs, tripods, poles



prisms

- CST 632010M - Single tilt prism with target (metal yoke)
- CST 651500 - Mini prism pack complete (metal housing)
- TOP 51920K - Single prism complete 2 1/2"
- TOP 51803 - Prism only 2 1/2"
- TOP 51910 - Single prism holder for 51803
- TOP 51828 - Site pole for 51910

Prism / Instrument Bags

- CST 612541 - Small nylon soft padded prism bag
- CST 612540 - Medium nylon soft padded prism bag
- CST 612546 - Total station soft nylon padded case (front load)

tribrachs/adapters

- CST 614500 - Tribrach with optical plummet
- CST 612525 - Rotating tribrach adapter with lock
- CST 612521 - Rotating tribrach adapter friction type
- SE 2152-03 - Tribrach with optical plummet
- SE 2070-00 - Rotating tribrach adapter with lock
- SE 2020-00 - Rotating tribrach adapter friction type
- TOP 55501 - Tribrach with optical plummet
- TOP 55502 - Tribrach without optical plummet
- TOP 51861 - Tribrach adapter S2 without optical plummet
- TOP 51851 - Tribrach adapter 2 with optical plummet

tripods

- CST ALC20 - Aluminum light weight tripod (QR)
- CST ALQR20 - Aluminum heavy duty tripod (QR)
- CST 60WDF20 - Wood/fiberglass tripod (QR)
- CST FGHD20 - All fiberglass heavy duty tripod (QR)
- SE 5302-10 - Wood/fiberglass tripod (QR)
- SE 5203-10 - All fiberglass heavy duty tripod (twist and QR)

prism poles / bi-pods

- CST 674708TMA - Maxi-Lite 8' prism pole (knob lock)
- CST 674712TMA - Maxi-Lite 12' prism pole (knob lock)
- CST 674715TMA - Maxi-Lite 15' prism pole (knob lock)
- CST 674508TMA - standard 8' prism pole (quick loc)
- CST 674512TMA - standard 12' prism pole (quick loc)
- CST 674515TMA - standard 15' prism pole (quick loc)
- SE 5129-54 - Carbon Fiber 8' robotic pole (knob lock)
- CST 674204 - 4' Non Graduated prism pole (quick release)
- CST 674260X - CST Thumb release bi-pod
- SE 5217-04 - SECO Thumb release bi-pod



632010M

651500M

CST
PRISM BAGS

612525

614500



55501



51861



ALQR20



60WDF20



674715TMA



5217-04

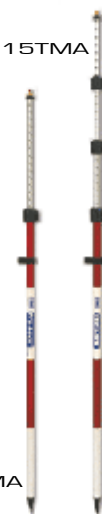
QUICK-LOC



KNOB-LOCK



674708TMA



TDS Nomad

rugged, compact, powerful

Nomad 800B
Nomad 800L

DATA COLLECTORS

The new TDS Nomad packs even more functionality into the most powerful and full-featured rugged handheld computer available. Start with an 806 MHz processor, a long-life battery and integrated wireless capabilities like GPS, 802.11g, and Bluetooth. Then select an optional Nomad configuration that includes an integrated laser bar code scanner and color digital camera. The Nomad also features a high-resolution, sunlight-visible VGA display that shows graphics and maps in crisp detail. And it's fully rugged and just as tough as our other handhelds which means the Nomad offers a lower Total Cost of Ownership (TCO) than consumer-grade handhelds.

Standard Features

- Windows Mobile 6.0 (Classic Edition)
- 806MHz XScale Processor
- 64 MB high-speed SDRAM
- 512 MB or 1GB nonvolatile Flash storage
- Sunlight-readable color TFT display
- Touchscreen
- Rugged waterproof design
- Integrated speaker and microphone
- 15 hours of continuous room-temperature operation
- Optional integrated Bluetooth and 802.11g wireless

High performance

Every Nomad comes with an 806 MHz Marvell PXA320 XScale processor, 128 MB RAM and a hot-swappable rechargeable lithium-ion battery pack to keep going strong all day. Recharging time is significantly reduced with the use of lithium-ion batteries.

Ultra rugged

Like all TDS rugged handhelds, the Nomad meets the rigorous MIL-STD-810F military standard for drops, vibration, humidity, altitude and extreme temperatures. It also comes with an IP67 rating.

Windows Mobile

The Nomad also includes the latest Windows Mobile 6 software, so it runs all the applications you use most, including a wide range of third-party software for industry-specific applications.

Wireless

The Nomad has built-in Bluetooth and optional 802.11g wireless communication capabilities. possible.



Available with
TDS Survey Pro 4.2
Survey STD
Survey Pro
Survey Pro + Robotics
Survey Pro + GPS
Survey Pro MAX



specifications

Physical

Size 6.92" (17.6 cm) x 3.92" (10.0 cm) x 1.96" (5.0 cm)

Weight 21 ounces (596 g) including rechargeable PowerBoot

Environment

Operating Temperature -22 to 140° F (-30 to 60° C)¹

Storage Temperature -40 to 158° F (-40 to 70° C)¹

Temperature shock MIL-STD-810F, Method 503.4

Humidity MIL-STD-810F, Method 507.4

Water IP67, sealed against accidental immersion (1m for 30 minutes)
MIL-STD-810F, Method 512.4, Procedure I

Drop MIL-STD-810F, Method 516.5, Procedure IV
26 drops from 4 ft (1.22 m) onto plywood over concrete
6 additional drops at -22° F (-30° C) 6 additional drops at 140° F (60° C)

Sand and Dust IP67, MIL-STD-810F, Method 510.4, Procedure I

Vibration MIL-STD-810F, Method 514.5, Procedures I (Figures 17) & II

Altitude MIL-STD-810F, Method 500.4, Procedures I, II and III
15,000 ft at 73° F (23° C)

Electrical

Processor Marvell PXA320 XScale @ 806 MHz

Memory 128 MB high-speed SDRAM ~ 22 MB reserved

Storage Onboard nonvolatile NAND flash
512 MB (Nomad 800B) 1 GB (Nomad 800L)

Expansion 1x Type II Compact Flash, 1x SDIO slot

Display 480 x 640 pixel (VGA) color TFT with LED back light

Batteries 5200 mAh Lilon rechargeable pack

Input/Output

Ports Standard 9-pin male D-shell RS-232 serial and USB ports



TDS Recon

rugged, compact, powerful

DATA COLLECTORS

Taking you further—at the office and in the field. The next-generation TDS Recon X-Series rugged handheld computer delivers maximum performance and reliability in a lightweight, extremely rugged design that's easy to carry. Featuring optional embedded Bluetooth and 802.11g wireless, the waterproof Recon weighs just 17 ounces, meets military specifications for drops, vibration, and both high and low temperature operation, and runs Windows Mobile 5.0. The Recon works wherever and whenever you need it.

Standard Features

- Windows Mobile 5.0 (Premium Edition)
- 200 MHz or 400MHz Intel PXA255 XScale Processor
- 64 MB high-speed SDRAM
- 128 MB or 256 MB nonvolatile Flash storage
- Sunlight-readable color TFT display
- Touchscreen
- Rugged waterproof design
- Integrated speaker and microphone
- 15 hours of continuous room-temperature operation
- Optional integrated Bluetooth and 802.11g wireless

High performance

The Recon features the high-performance 200 MHz or 400 MHz XScale processor, a color display with front light, 64 MB of RAM and 128 or 256 MB of nonvolatile Flash storage to protect data from resets or power loss.

Ultra rugged

The Recon can handle the toughest field conditions. It meets MIL-STD-810F standards for drops, vibration and temperature extremes, and it has an IP67 rating—meaning it's impervious to dust and water immersion.

Windows Mobile

The Recon runs Windows Mobile 5.0, so you'll have the applications you use most—including a calendar, e-mail, and Mobile versions of Word, Excel and even PowerPoint.

Long battery life

The Recon's rechargeable NiMH PowerBoot module provides 3,800 mAh of power, enough to give you at least 15 hours of continuous typical use—more than a full day's work. The optional AA PowerBoot Module uses two AA batteries (alkaline or lithium) to keep your Recon running for up to 16 hours. It's perfect as a backup or in areas where recharging isn't possible.



Recon 200X
Recon 400X
Recon NX

Available with
TDS Survey Pro 4.2
Survey STD
Survey Pro
Survey Pro + Robotics
Survey Pro + GPS
Survey Pro MAX



Recon for land surveyors

Survey Pro on the Recon is now even more affordable. Running Survey Pro 4.x software, the new Recon NX gives HP 48 users an option to update their data collector at a very comfortable price.

specifications

Physical

Size 6.50" (16.5 cm) x 3.75" (9.5 cm) x 1.75" (4.5 cm)

Weight 17 ounces (490 g) including rechargeable PowerBoot

Environment

Operating Temperature -22 to 140° F (-30 to 60° C)¹

Storage Temperature -40 to 158° F (-40 to 70° C)¹

Temperature shock MIL-STD-810F, Method 503.4

Humidity MIL-STD-810F, Method 507.4

Water IP67, sealed against accidental immersion (1m for 30 minutes)
MIL-STD-810F, Method 512.4, Procedure I

Drop MIL-STD-810F, Method 516.5, Procedure IV
26 drops from 4 ft (1.22 m) onto plywood over concrete
6 additional drops at -22° F (-30° C) 6 additional drops at 140° F (60° C)

Sand and Dust IP67, MIL-STD-810F, Method 510.4, Procedure I

Vibration MIL-STD-810F, Method 514.5, Procedures I (Figures 17) & II

Altitude MIL-STD-810F, Method 500.4, Procedures I, II and III
15,000 ft at 73° F (23° C)

Electrical

Processor Intel PXA255 XScale CPU

@ 200 MHz (Recon 200X, NX) @ 400 MHz (Recon 400X)

Memory 64 MB high-speed SDRAM ~ 22 MB reserved

Storage Onboard nonvolatile NAND flash
128 MB (Recon 200X) 256 MB (Recon 400X)

Expansion 1x Type I and 1x Type II Compact Flash slots

Display 240 x 320 pixel (¼ VGA) color TFT with LED front light

Batteries 3800 mAh NiMH rechargeable pack

Input/Output

Ports Standard 9-pin male D-shell RS-232 serial and USB ports



TDS Ranger

rugged, durable, powerful

DATA COLLECTORS

Smart, tough and loaded with additional features. Featuring Windows Mobile 5.0, the next-generation TDS Ranger possesses features that field professionals depend on, like field-ready ruggedness, 30-hour battery and an easy to use keypad and touchscreen. The Ranger grows more versatile as technology evolves, integrating more and more capabilities designed to improve your work life.

The Ranger gives you the option of integrated Bluetooth and 802.11 wireless, so you can connect to your field equipment without bulky cables. The CompactFlash (CF) slots allow you to add GPS, GPRS, digital cameras, bar-code scanners and other CF devices. The Secure Digital (SD) slot lets you increase data storage to handle larger jobs and is SDIO-enabled.

Standard Features

- Microsoft Windows Mobile™ 5.0
- 53 tactile keys with separate navigation, alpha and numeric keypads, plus 8+1 directional pad
- Touchscreen
- Battery life of 30 hours under normal operating conditions
- Complete recharge in 4.5 hours (80% in 2 hours)
- Battery charge status LED indicator
- Notification LED
- Rugged polycarbonate shell
- Integrated speaker and microphone

Go Wireless

You have the option of integrated Bluetooth and 802.11g wireless. The Ranger now comes in two models, the 300X and the 500X, to give you the choice of adding the options you want.

Windows Mobile 5

The Ranger's operating system is Microsoft Windows Mobile 5.0. Run the Mobile version of all your favorite programs including PowerPoint and Outlook. Take advantage of the ability to run thousands of software programs designed for this OS.

PowerBoot Module

A lithium-ion battery pack keeps your Ranger going strong day after day. With normal use, the Ranger's PowerBoot Module provides 30 hours of power. Recharging time is significantly reduced with the use of lithium-ion batteries—4.5 hours for full recharge and two hours for 80% recharge.

Ranger NX Model

The Ranger NX gives you another choice in data collectors. By removing the option of expansion slots and providing 128 MB of on-board Flash storage, the Ranger NX becomes an extremely affordable rugged device.



Ranger 300X
Ranger 500X
Ranger NX

Available with
TDS Survey Pro 4.2
Survey STD
Survey Pro
Survey Pro + Robotics
Survey Pro + GPS
Survey Pro MAX



Ranger for land surveyors

Survey Pro on the Ranger is now even more affordable. Running Survey Pro 4.x software, the new Ranger NX gives HP 48 users an option to update their data collector at a very comfortable price.

specifications

Models Overview 500X • 300X • NX

PROCESSOR/SPEED: 520 MHz • 312 MHz • 312 MHz

MEMORY: 128 MB • 64 MB • 64 MB

DATA STORAGE: (On-board Flash) 512 MB • 256 MB • 128 MB

WIRELESS:

Integrated Bluetooth Standard • Optional • N/A

Integrated 802.11g Optional • Optional • N/A

Physical

Size 10.5" (26.6 cm) x 5.2" (13.1 cm) x 1.9" (4.8 cm)

Weight 952 g (2.1 lb), including battery

Environment

Operating Temperature -22 to to 140° F (-30 to 60 C)¹

Storage Temperature -40 to 158° F (-40 to 70 C)¹

Humidity MIL-STD-810F, Method 507.4

Water IP67, sealed against accidental immersion (1 m for 30 min.)

Drop MIL-STD-810F, Method 516.5, Procedure IV

48" onto concrete, 26 drops at room temperature (all faces, edges, corners, one drop each)

Dust IP67, MIL-STD-810F, Method 510.3, Procedures I & II

Vibration MIL-STD-810F, Method 514.5, Procedure I, Figs. 5 & 17

Altitude MIL-STD-810F, Method 500.4, Procedures I, II & III 15,000 ft at 73 ° F

Input/Output

Ports 9-pin serial port—RS232 (115 Kbps), USB client, DC power port

Electrical

Processor Intel PXA 270 XScale CPU

Expansion (not available on NX model) 1x Type I and 1x Type II CompactFlash
1x Secure Digital (SD) memory card slot

Display 320 x 240 pixel (1/4 VGA) color TFT with LED backlight

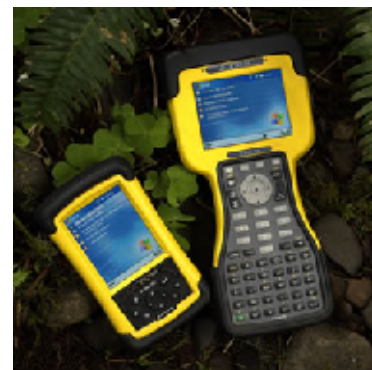
Power Li-Ion rechargeable pack, 6600 mAh

Batteries 6600 mAh Lithium Ion rechargeable pack



TDS Recon/Ranger accessories

compact flash cards



Holux GR-271 GPS

- * WAAS enabled
- * Internal antenna
- * SiRF Star III chip
- * ROHS compliant
- * Without WAAS/EGNOS: 5-10 meter accuracy
- * With WAAS/EGNOS: < 2.2 meter accuracy, horizontal 95% of time < 5 m, vertical 95% of time
- * This product is only compatible in the right-hand CF slot.



LifeView FlyCAM-CF Camera

- * 1.3 megapixel resolution
- * Still and video capture



Socket Bluetooth

- * Short range wireless communication
- * NOTE: Not for use in units with built-in Bluetooth.



power

PowerBoot Module Recon

- * Up to 15 hours battery life
- * 3800 mAh NiMH battery
- * Rechargeable



AA PowerBoot Module

- * Takes 2 AA batteries
- * Lithium or alkaline
- * No need to recharge



Vehicle Charging Cable Recon

- * 12V cable
- * Recharge while driving



Power Supply Recon

- * North American and International models



PowerBoot Module Ranger

- * Up to 30 hours battery life
- * 6600 mAh Li-Ion battery
- * Rechargeable



Vehicle Charging Cable Ranger

- * 12V cable
- * Recharge while driving



AC Charger Ranger

- * Multiple-standard power supply
- * International plug adapters



compact flash caps

Extended CF-Cap Recon

- Compatibility:
- * GPS cards
- * Other oversized CF cards



Extended/Optical CF-Cap Ranger

- Compatibility:
- * GPS cards
- * Socket 5P Scan card for bar codes
- * Other oversized CF cards



cases

Standard Carry Case Recon

- * Standard size
- * Long-lasting nylon
- * Belt loop



Standard Carry Case Recon

- * Extended size
- * Long-lasting nylon
- * Belt loop



Standard Carry Case Ranger

- * Standard size
- * Long-lasting nylon
- * Belt loop



Extended Carry Case Ranger

- * Extended size
- * Long-lasting nylon
- * Belt loop



miscellaneous

Stylus pens (set of two)



Screen Protectors

- * Easy to install
- * standard style, pack of ten
- * long-life, clear or anti-glare, pack of two



Lanyard

- * Stylus pen convenient when needed
- * Velcro safety release



Hand Strap

- * Elastic
- * Prevent accidental drops



Tripod Hook

- * Easy to install
- * Works with major tripod brands
- * Comes in a kit



Pole Brackets (no picture)

- * RECON 200/400/NX
- * RANGER 300/500
- * RANGER 200

cables

Instrument interface cables for:

Topcon • Nikon • Leica • Trimble • Sokkia

Instrument download cables

9 pin Serial • USB



TDS Survey Pro 4.3
Survey STD
Survey Pro
Survey Pro + Robotics
Survey Pro + GPS
Survey Pro MAX



TDS Survey Pro

data collection software

DATA COLLECTORS

The #1 choice since 1995—productive, reliable, comprehensive TDS Survey Pro surveying software has been the #1 choice of surveyors since 1995. That's because Survey Pro gives you a complete set of capabilities for all your survey projects—and it's fast, reliable and easy to use, so you can work more productively in the field.

And Survey Pro is always getting better. Based on feedback from surveyors like you, we regularly add enhancements and new features to Survey Pro that will help you work more productively in the field. And we always welcome your comments and suggestions so we can continue to update Survey Pro to support all the latest instruments and make your workflow faster and easier.

· BNP Media, "Surveying and Mapping Industry Study," 1995-2006. Includes TDS software sold by dealers and TDS partner companies.



Today's Survey Pro is better than ever, with features and function enhancements that make your workflow faster and easier. At the same time, TDS continues to update Survey Pro and they actively seek your feedback so they can keep making Survey Pro even better for you.

SURVEY
PRO

+



=

PROFIT

Survey Pro on TDS data collectors

The best way to run Survey Pro is on a TDS handheld data collector. That's because we developed both the TDS Recon and Ranger rugged handheld computers to work with Survey Pro. The Recon and Ranger run Survey Pro functions and routines quickly, making it easy to use all the software's capabilities.

Survey Standard

Survey Standard is complete data collection software for surveyors. You can get a complete COGO suite including triangle solutions, map check and predetermined area, as well as traverse, sideshot and staking routines. And you can easily upgrade Survey Standard to any other Survey Pro level.

Survey Pro

Survey Pro adds several advanced features to Survey Standard. Survey Pro provides intuitive and powerful slope staking and road layout routines. You can also view DTM files, stake using the DTM surface and collect feature/attribute data, helping you save time in the field and in the office.

Survey Pro Robotics

The Survey Pro Robotics data collection package includes the functionality of Survey Pro and reliably controls your robotic total station with an easy-to-use interface that features intuitive, useful search tools, active maps, automatic repetition and a fine-turning routine that lets you make even precise turns remotely.

Survey Pro GPS

The Survey Pro GPS data collection package contains most Survey Pro functions, and adds the ability to collect data from RTK GPS receivers, as well as the ability to configure and store static GPS data. TDS GPS software reduces training and simplifies setups, and the Start Survey Wizard takes you through a streamlined GPS setup procedure.

Survey Pro Max

Survey Pro Max is the ultimate field software. It integrates Survey Pro Robotics and Survey Pro GPS functions, enabling you to use the same job files with both GPS receivers and total stations.

CLEARY
MACHINERY CO., INC.



LASERS • SURVEY • GPS • MACHINE CONTROL

24 Cedar Street • So. Bound Brook, NJ 08880-1352

Phone: 800-453-7726
Fax: 732-805-0022

FC-25

pocket sized power

DATA COLLECTORS



Features

- * Windows Mobile® 6.5
- * Embedded 20 Channel GPS Receiver
- * WLAN/Bluetooth® Wireless
- * 533MHz CPU / 256MB SDRAM
- * Field-exchangeable Li-ion Battery
- * Rugged and Lightweight (11.3 oz.)
- * IP65 Dust/Water Protection
- * FC-25A also with Built-in Camera, Compass, and Altimeter



Available with
TopSurv 8 modules: :
Contractors
STD
Pro
Pro + Robotics
Pro + GPS
Complete
GIS



Rugged and Compact

Topcon FC-25/25A features a pocket-sized, lightweight body with exceptional ruggedness. Conforming to the MIL standard and the IP65 dust/water protection, these field controllers are able to survive severe worksite conditions.

FC-25 screen Integrated Sensors

Embedded 20 channel GPS chipset provides positional information by point positioning or by DGPS using SBAS corrections. The FC-25A incorporates a 3MP auto focus camera, electronic compass and an altimeter for GIS data collection applications.

Easy, Intuitive Operation

Windows Mobile 6.5 operating system and a 3.5" sunlight readable touch screen display provide quick, easy, and intuitive operation.

Field-exchangeable Battery

Rechargeable Li-ion battery can be removed and replaced at the worksites. Battery charger is available as an optional accessory.

specifications

COMPUTER

CPU 533MHz

OS Microsoft Windows Mobile® 6.5

Memory 256MB SDRAM, 2GB Flash Memory

Display 3.5" Sunlight Readable TFT color LCD 640x480 VGA with Touch Screen

Keypad 4 keys (including power key) and 1 directional key

Interface Wireless LAN 802.11 b/g Bluetooth® Ver.2.0 Class 2 USB Type Mini-B (Host 1.1/Client 2.0, to be switched by software) SD/SDHC Card Slot (Up to 16GB SDHC)

INTEGRATED SENSOR

GPS Type SiRFstarIII Chipset, GPS L1 (C/A), 20 Channels

Horizontal Accuracy (RMS)*1 DGPS*2: 1m to 3m (3.3' to 9.9'), Point Positioning: 5m (16.4')

Built-in Camera (FC-25A) 3 Megapixels, Auto Focus Camera

Other Sensor (FC-25A) Electronic Compass, Altimeter

ENVIRONMENTAL

Dust/Water Protection IP65 (IEC 60529:2001)

Operating Temperature -22° F to +140° F (-30° C to +60° C)

Temperature Shock MIL-STD-810G, Method 503.5, Procedure I-C; -30°C ~ 71°C

Humidity Up to 95%, non-condensing

MIL-STD-810G Drop 5' (1.52m), Vibration, Humidity

PHYSICAL

Dimensions H 5.75" x W 3.23" x D 1.30" (H 146 x W 82 x D 33mm)

Weight with Battery 11.3 oz (320g)

Battery Removable Li-ion Rechargeable Battery, 3.7V, 2400mAh

Operating Time 7.5 hours with Bluetooth® connection

Recharging Time 3.5 hours



FC-1 20

rugged, compact, powerful

DATA COLLECTORS



Standard Features

- Built-in Bluetooth® wireless technology
- Ultra-bright, TFT, color touch screen display
- Windows® CE.NET 5.0 operating system
- Compact, Rugged design
- Easy access Compact Flash and SD Media card slots deliver memory expansion and connectivity options
- 520MHz XScale processor
- Removable, Long-lasting Li-Ion batteries
- 64MB SDRAM, 128/256MB ROM

Available with
Topcon TopSurv modules:
Contractors
STD
Pro
Pro + Robotics
Pro + GPS
Complete
GIS



If you are looking for a compact controller that provides big-time results, look no further than Topcon's FC-1 20. The FC-1 20 field controller incorporates the graphical Windows CE operating system on a crisp, bright, color touch screen display that makes your field data come alive. This powerful operating system, combined with the versatility of dual removable media for data storage and transfer; the easy-access, long-life "camcorder" style rechargeable battery; and the compact design that small on size, but not in performance, makes the FC-1 20 is the perfect field controller for any job.

specifications

Internal

Microprocessor Intel PXA270 Xscale
Processor Speed 520 MHz
Operating System Windows CE.NET 5.0
Memory 0.512 Eboot MB, 64 SDRAM MB, 128/256 (built in CF card)

Physical

Type of data collector Handheld Controller
Dimensions 182 x 103 x 59 mm
Weight 600 (with batteries) grams

External

Display QVGA (Portrait) 3.5 inch color TFT Transreflective type, 240 x 320 pixel dimensions
Backlight LED Backlight
Keyboard ESC, Alt, Enter, Windows, Desktop, and Power Key, Cursor key keys, 10 total keys
Touch Screen Resistive/Passive touch screen
External Power with run charge
Audio integrated sealed speaker (mono), sealed microphone

Interface

Serial RS-232C Serial (D-sub 9)
USB Type B mini Ver1.1
IrDA no
Ethernet no
Built-in BT yes
SD yes (memory)
Compact Flash 1 x Type I/_ (Memory and I/O Card)

Environmental

Operating Temperature -20 to +50 degrees Celsius
Storage Temperature -30 to +60 degrees Celsius
Water 66 IP
Drop Dropping this instrument from a height of 1 meter does not affect its functions
EMC EN55022, EN55024
ESD EN61000
Mandatory FCC Class B, CE, CSA

Power

Batteries Li-Ion rechargeable system 2200mAh / 7.4V
Operating Time 20-45 Hours
Charge Time with fast charger 3 Hours

Other

Accessories Battery (BT-62Q), AC-DC converter (AD-9), Interface cable (F-25), Handstrap, Soft case, Stylus pen, Display protection sheet_5, manual



FC-250

rugged, state-of-the-art



- * 806MHz Processor
- * Windows Mobile 6.5 operating system
- * RS-1 Radio capable
- * Compact, ruggedized design
- * Easy access Compact Flash and SD Media card slots deliver memory expansion and connectivity options
- * Built-in Bluetooth® wireless technology and WiFi
- * Removable Li-ion batteries
- * Ultra-bright, TFT, color touch screen display
- * Wireless connectivity available for Topcon GPS+ and W-series total stations
- * Cable-free operation
- * Ruggedized, shock absorbing environmentally sealed housing
- * Separately sealed battery makes swapping a snap
- * Shock Resistance, 1 meter drop resistant



Available with
TopSurv 8 modules :
Contractors
STD
Pro
Pro + Robotics
Pro + GPS
Complete
GIS



The FC-250 field controller incorporates Windows Mobile 6.5 operating system on a crisp, bright, color touch screen display that makes your field data come alive. This powerful operating system, combined with the versatility of dual removable media for data storage and transfer; the easy-access, long-life rechargeable battery; and the compact design that is small on size, but not in performance, makes the FC-250 the perfect field controller for any job.

The FC-250 has built-in Bluetooth wireless technology and WiFi. Both the Bluetooth and WiFi components are hardwired inside the device leaving the CF card slot open and available for other CF devices.

specifications

- Microprocessor** Marvel PXA320
- Processor Speed** 806MHz
- Operating System** Microsoft Windows Mobile 6.5
- Memory** DDR SDRAM 256MB
- Flash Memory** 1GB (NAND)
- Interface** Serial: D-sub 9 pin
- USB:** (2 ports) USB rev 1.1 (Type Mini-B and Type A)
- Card Slot:** SD (Memory and I/O)
- Compact Flash** (Memory and I/O)
- Bluetooth Capable** Yes
- Wireless LAN** Yes (802.11b/g)
- LCD Display** 640 x 480 VGA (portrait)
- Color Sunlight Readable** 3.7 inch color TFT transparent type
- Backlight** Backlight (LED)
- Touchscreen** Resistive touch screen/passive
- Keyboard** 7 key w/smart keyboard
- External Power** Yes
- Audio** Sealed Speaker (mono)
- Sealed Microphone** Yes (mono)
- Environmental** IP-66
- Operating Temperature** -4° F to +122° F (-20° C to +50° C)
- Dimensions** 7.72 in. x 4.21 in. x 2.40 in. (196 x 107 x 61mm)
- Weight** 1.5 lbs (0.7kg)
- Batteries** Removable Li-ion batteries
- Internal rechargeable backup battery**
- Operation** (main battery) No less than 10 hours without communications
- No less than 8 hours with Bluetooth
- No less than 6 hours with WLAN



FC-2500

rugged, powerful, full size

DATA COLLECTORS



Standard Features

- * 624MHz XScale processor
- * 5.17 megapixel camera and bar code reader
- * 256Mb RAM, 2Gb ROM (4X the competition)
- * Built-in wireless Bluetooth® and WiFi connectivity
- * Windows CE.NET 5.0 operating system
- * Add-on robotic radio design
- * 55 key alphanumeric keyboard
- * 8 way directional arrow and enter key
- * Easy access USB flash drive
- * Accessible, rechargeable and hot swappable batteries

Available with
Topcon TopSurv7 modules: :
Contractors
STD
Pro
Pro + Robotics
Pro + GPS
Complete
GIS



The world's most advanced field controller is also the world's toughest. Topcon's FC-2500 is fully loaded to unleash your productivity. Its rock-solid design takes drops, dirt, even drowning, without fear of data loss.

FC-2500 Add-on robotic radio design

The FC-2500 has an add-on connection on the back of the unit to control a spread spectrum radio for robotics communication. Use this connector and an RS-1 to have a cablefree radio connection to the Topcon robotic instruments. Additional packs may be possible in the future.

Alphanumeric Keyboard

Finally a 55 key alphanumeric keyboard unit that can control the Robotic systems. We know that land surveyors in the US market prefer an alphanumeric keyboard data collector. This FC-2500 can handle the robotic radio as an expansion slot radio.

USB Flash Drive

Use the USB mini port as both a Host and Client. This On-The-Go (OTG) functionality allows for expanded memory and easy file transfer through USB flash drives or ActiveSync connection. This design also provides rugged protection. The FC-2500 can not be compromised by opening a card door or flap. The entire unit is sealed and submersible.

Removable, hot swappable battery packs

With two NiMH batteries loaded standard with 2500mAh each, battery performance can be as high as 50 hours. But with all the functionality of this device turned on and on full power drain, you can still count on 12-14 hours. The typical power drain from a Bluetooth connection to a GPS receiver will run for 24 hours. Don't ever worry about overcharging, the FC-2500 has internal temperature monitors to prevent any unexpected high temperature issues.

Waterproof and rugged

The FC-2500 is rated at IP-67, which means it can be accidentally submersed in water. The unit also has a 3 foot drop proof rating.

5.17 MP Camera

Capture Reality in yet an additional device from Topcon. Topcon understands that a picture is worth more than a thousand words. This highly advanced camera can be used to associate photos with stored TopSurv points as Photo Notes. For every topo shot, as photo note can be stored.

specifications

Internal

Microprocessor Xscale PXA 270

Processor Speed 624 MHz

Operating System Windows CE.NET 5.0

Memory 256 SDRAM MB, 2 GB internal flash (built in CF card)

Physical

Type of data collector Handheld Controller

Dimensions 10.85 in. x 5.34 in. x 2.19 in.

Weight 2.36 lbs. (with rechargeable battery pack)

External

Display 3.5 in. TFT Color LCD, 240 x 320 pixel dimensions

Backlight LED Backlight

Keyboard Alpha numeric, ten key, Power key, cursor key, etc keys, 53 total keys

Touch Screen Resistive/Passive touch screen

External Power with run charge

Audio Beep Tones

Interface

Serial RS-232C Serial (D-sub 9) RS-232C Serial (6 pin for total-station)

USB Type B mini Ver 1.1

WiFi 802.11 b/g

Built-in BT yes

Built-in Camera 5.17 megapixel processed

Environmental

Operating Temperature -20 to +50 degrees Celsius

Storage Temperature -20 to +70 degrees Celsius

Water 67 IP

Drop Designed to protect falling on the hard surface from 1.0m above the ground.

EMC EN55022, EN55024

ESD EN61000

Mandatory FCC Class B, CE, CSA

Power

Batteries NiMH rechargeable system 2500mAh

Operating Time 42 Hours

TopSurv 8

field collection software

DATA COLLECTORS

Available with
Topcon TopSurv
modules:
Contractors
STD
Pro
Pro + Robotics
Pro + GPS
mmGPS
Complete

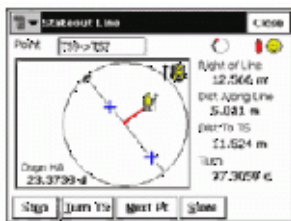


hardware platform

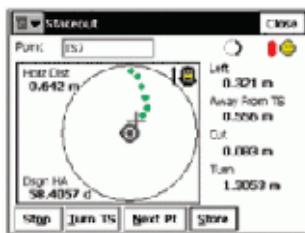
Operating System : 32 bit, Windows CE OS, 3 Version
Graphics : 320 x 240 min resolution w / H in pixels, 640 x 480
alt resolution w / h in pixels
RAM : 64 min Mb
Disk Space : 64 min free in Mb, flash (internal) type

Features

- # Faster
- # 60% smaller file size
- # Icon-based GUI
- # Intuitive, easy operation
- # Advanced import/export
- # More COGO
- # Advanced collection routines



stakeout made simple



Field controller software with a superior graphical user interface and fast performance

See everything clearer.

Of the many features in the new TopSURV 8, the large graphical user interface (GUI) is one of the best. With the big icons you can point and touch with your finger; instead using a stylus. Portrait and landscape devices supported.

Survey with speed and convenience.

Create, edit, upload, and download faster using advanced data management techniques. How many instruments do you use on the jobsite? To simplify your work, Topcon stores configuration files for each instrument. Switching from a GRS-1 to a QS is a snap — there's no wasted time configuring baud rates and connection settings. Just do it once and store it. Compatibility problems? We know there are several programs that require specific file formats, so we've given TopSURV 8 numerous file formatting export options.

Modules

TopSURV Standard — Powerful, easy-to-use package that meets your surveying needs including data collection, a multitude of stakeout options, advanced COGO, data conversions, and more.

NEW! Contractor — Simplified functionality for common layout tasks and point collection.

Roading — Create & edit cross section templates, horizontal and vertical alignments, road & slope stakeout, and more.

Robotic — Take control of your Topcon robotic instrument, with complete support for all of the advanced features of our full robotic line-up! Includes automated surface scanning integrated with digital imaging. Pictures are 'rubber sheeted' over measurements for 3D viewing and analysis in Topcon Tools.

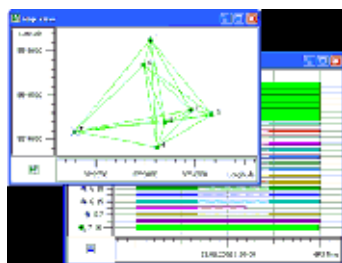
GPS — RTK setup and control is quick and easy with our Auto-Base and Auto-Rover routines. Allows complete integration of GPS and conventional surveying data! Unleash the full power and capability of your Topcon GPS+ system!



Topcon Tools

pc processing software

DATA COLLECTORS



GPS processing

Import Data From Files:

- RINEX / Compact RINEX data,
- NGS Data sheets,
- ASCII control files,
- Roads and X-Section Templates Data,
- DXF, DWG, Land XML, SHP Post Processing
- Processing static, stop and go, kinematic

Topcon GPS+ and RINEX/ Compact RINEX data

- Engine mode selection
- Precise ephemerides using for processing both GPS and GLONASS satellites observations
- Possibility to split and merge occupations
- Disable Satellite(s) from processing

Adjustments

- Least Squares free or constrained adjustment of separate or mixed TS, GPS and DL observations
- Separate adjustments for plane coordinates and for heights performed after network analysis by the Adjustment module
- Reports on adjusted points, fixed/weighted points, used and rejected observations, errors of unit weight (UWE) and UWE bounds

Localization and Coordinate Systems:

- Separate Horizontal and Vertical localization
- Localization Algorithm computing conversion parameters from WGS84 to a local system using one or more pairs of Control Points
- Extensive projections support
- Wide range Geoid support

Design module:

- Creating a digital terrain model and graphical view of this model in the CAD and 3D View
- Creating roads, TopSURV and other software roads support
- X-section templates import from different formats

Image Module:

- Scan sessions support
- Stereopairs import and viewing
- Positioning points on the stereopairs

Export Data to Devices

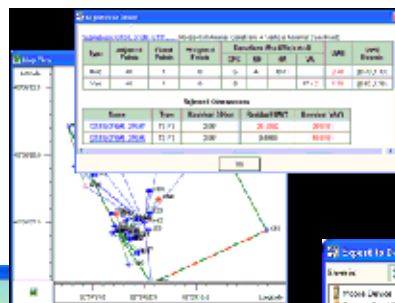
- Coordinates data files to a Total Station
- Any files from Topcon Tools to a TPS Controller

Topcon's Topcon Tools software provides a powerful post-processing solution, network analysis and adjustment with an intuitive operator interface that's easy to learn and use. Version 6.04 further expands the already diverse modular functionality with a new 'Imaging' module to support our newest line of optical imaging products. Impressive data automation routines take much of the hassle out of GPS processing and get you the right answer fast!

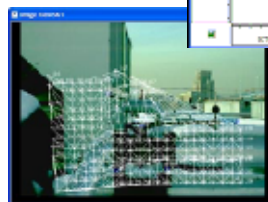
Features Include:

- NEW! GIS High Accuracy module GIS Professional bundles the GIS module with High Accuracy module
- Imaging Module
- Easy-to-use graphical interface
- Topcon GPS+ data processing with direct import from Topcon receivers using Topcon Link
- Expanded features on Design Module include DTM edits, Advanced layer control, and more
- Advanced Processing module enhanced
- Additional background image support (Mr.SID;)
- Expanded import and export for Autodesk

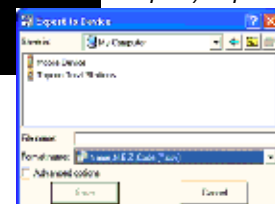
Graphical Windows based screens provide a map and CAD view of your project along with sortable tables of observation and vector information. With user defined reports and customizable job configurations, Topcon Tools can process and report data for specific projects and users. Powerful data checking and editing is at your fingertips!



Adjustments



Imaging



Import/Export



Survey Master

pc survey software

OFFICE SOFTWARE



Complete Desktop Survey Software Solution

With SurveyMaster, a user has all he needs to complete a field project whether it is a simple mortgage survey with a one page print out of the boundary and house, or a complicated multi-surface construction jobsite with roads, utilities, machine control and buildings. From Field to Finish, SurveyMaster can handle that critical data flow efficiently.

Straight Forward Licensing

SurveyMaster runs on the actual USB key. So when a user needs to move to a different PC or perhaps go out into the field, he simply takes his USB key with him. He can run SurveyMaster on as many PCs as he likes without having to run time consuming installations on each PC. Just simply plug in the USB Key.

Designed by experience

SurveyMaster was designed by surveyors that have the software experience needed to understand what is needed to manage site and surveying data efficiently. We provide the user with all the legal, annotation, adjustment, and drafting tools they need in one Topcon product.

Standalone performance and freedom

SurveyMaster is standalone CAD-based software that Topcon controls all aspects of. We interface with all of our field equipment and allow you a simple import and export path to other specific software if needed. There are no costly subscriptions or painful annual license agreements.

Control your survey data with SurveyMaster – whether in a deeded boundary survey or a construction site. SurveyMaster was designed by surveyors for surveyors and stands alone in ease of use and seamless integration with Topcon field equipment.

- * Complete Desktop Survey Solution
- * Field to Finish Topcon Solution
- * Synchronization with TopSURV 7
- * Program is transportable – USB Key
- * Finished Plat Printing
- * Land Survey Functions
- * Contouring and Surface File Editing
- * Volume analysis
- * Standalone performance

Specifications

Hardware Platform

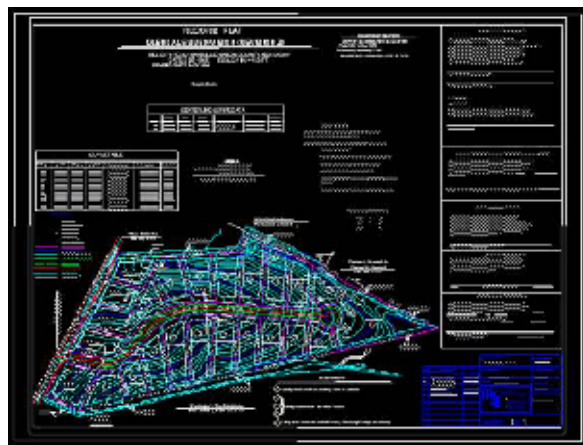
type 32 bit, Windows

2000/XP/Vista OS

RAM 512 min Mb

Processor speed 500 MHz or higher

Connectivity USB2 Port



GMS-2

hand-held gps/gis mapping system

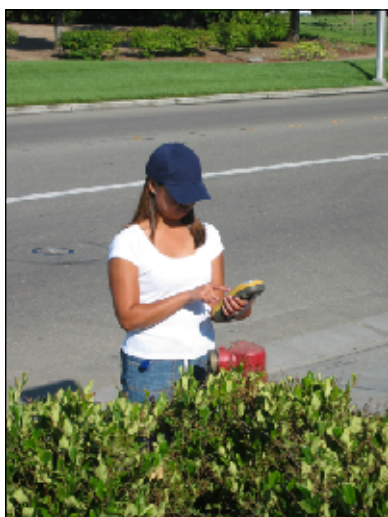


GPS RECEIVERS

Introducing the next generation of compact satellite positioning receivers. Setting the new standard for handheld GPS systems, the GMS-2 combines more functionality into one device than ever conceived of before now!

FEATURES:

- DUAL CONSTELLATION SATELLITE TRACKING
- INTEGRATED DIGITAL CAMERA
- CUSTOMIZED FIELD SOFTWARE
- ULTRA-SHARP COLOR TFT TOUCH SCREEN
- WIRELESS DATA COMMUNICATION (BLUETOOTH)
- BUILT-IN ELECTRONIC COMPASS
- EXTERNAL ANTENNA PORT
- DUAL USE - GPS RECEIVER OR FIELD CONTROLLER
- LIION RECHARGEABLE BATTERY PACK
- SD MEMORY SLOT
- USB AND SERIAL PORTS



One person, cable free operation for fast dependable results in the field. The GMS-2 is powerful enough to tackle all types of job requirements.



Track GPS and Glonass satellites, take digital photos and collect field data from a total station...the GMS-2 can do it all.

available with TopSurv



Includes:

- GMS-2 receiver
- Lilon battery pack and charger
- USB download cable
- Soft carrying case
- Manual and stylus pens
- Topcon Tools GIS module (optional)

specifications

Number of channels 50 GPS+Glonass
DGPS accuracy 50cm HRMS
L1 static function H- 3mm V- 4mm
WAAS/EGNOS Yes
CORS beacon Yes with BR-1
Internal memory Flash 256MB - 128SDRAM
Processor 520MHz intel
Operating system Windows CE 5.0
Onboard software TopSurv or TopPAD
Office software Topcon Tools (GIS)
Display Color QVGA touchscreen
Input/Output Bluetooth, USB, Serial
Battery life 7 hours in GPS mode
Battery type Lilon battery rechargeable
Weight 0.7kg
Environmental IP66, 1 meter drop



GMS-110

GIS mapping system



GPS RECEIVERS

The new Topcon GMS-110 system was designed to provide a compact, rugged GIS Mapping system that incorporates all of the primary position correction services – Beacon, WAAS, EGNOS, and OmniSTAR – VBS. Utilizing Topcon's integrated system design and Bluetooth® wireless technology, the GMS-110 brings the versatility of a backpack GIS solution without the mess of a bunch of external cables and components.

GMS-110 Features:

- Sub-meter accuracy with real-time differential correction from OmniSTAR –VBS and Navigation Beacons
- OmniSTAR satellite differential correction provides wide area coverage
- Coastal navigation beacons provide free differential correction over most of North America and Europe
- WAAS and EGNOS ready

The GMS-110 receiver system also provides your choice of field data controller. Now users can choose between ESRI's ArcPad field solution for the advanced GIS maintenance professional, and Topcon's TopSURV-GIS for the surveyor-friendly GIS data acquisition system. Both software systems are available on Topcon's rugged FC-100 Windows CE color touchscreen field computer. advanced technology precision GPS+.



FC-100
data controller

GMS 110 MAP RT w/MGA5:

- Assy, Map Rt Boxed
- Assy, map Rt
- Cable Rec To Serial Db9
- Cable Power Receiver To Sae
- Cable, power/charger
- Power Supply W/48" Safeco Conn
- Gps L1
- Sw, Omnistar Operating Option
- Rtcn Input (Rover Gps L1)
- Waas Option
- Registration, Omnistar Form
- Kit, Mg-a5 W/cables And Adapter
- Assy, mg-a5 Antenna
- Adapter, Mga Hard Anodized
- Cable Gps Antenna 3 Meter
- Backpack, gis Reflective W/pole
- Cable Rec To Serial Db9
- Data Recording Capacity 4mb
- Kit, Topcon Tools Gis Sw + Usb
- Manual, Topsurv Map-rt Qrg
- Manual, Gms-110 Operator's



specifications

Tracking

Signal GPS L1 C/A Carrier

Channel 40

Cold Tracking <60 seconds

Warm Tracking <10 seconds

Reacquisition <1 seconds

Physical

Enclosure aluminum construction

Dimensions 157 x 48 x 170 mm

Weight 1.3 kg

Color Topcon Grey

Environmental

Operating Temperature -30 to +60 degrees Celsius

Storage Temperature -40 to +70 degrees Celsius

Humidity 95 %

Power

Internal Battery Li-ion, 4000 mAh, 7.4V x 2 batteries

Operating Time 15-22 Hours

External Power 1 port(s)

Input Voltage 6 to 28 V DC, 2 minimum charge

Power Consumption 3.4 Watts

Battery Charger AC Adaptor

Charging Time 8-10 Hours

Key and LED

Key 3: on/off, data logging, reset

LED 5: Satellite, data, battery, omnistar/beacon, bluetooth

Memory

Internal Memory Compact flash card

Capacity 512 max, 32 standard MB

Logging Time 158 Hours

Connectors

External Power Port 1 port(s), 5 pin ODU

External Antenna Connector TNC connector

Serial Port 1 port(s), 7 pin ODU



GRS-1 handheld RTK GNSS network receiver



Topcon, the company that brought you the first integrated GPS receiver now brings you the first fully integrated handheld GNSS receiver and field controller!

Small & Lightweight Design—

ideal network rover

Scalable & Expandable—

handheld or on-the-pole

Multifunction—

survey/map/navigate/communicate



World's First all-in-one, handheld, dual frequency GNSS Receiver and Field Controller

- * Smallest, lightest RTK rover receiver
- * 1 cm RTK accuracy
- * Dual-frequency, 72 channel GPS + GLONASS receiver
- * Fastest receiver—100Hz
- * Integrated cell phone (GSM, CDMA)
- * 806MHz XScale Processor
- * Bright, touch screen display
- * Integrated camera & compass
- * Windows Mobile 6.1 Operating System
- * Built-in Bluetooth wireless technology and Wireless LAN connectivity



Topcon's new GRS-1 (Geodetic Rover System) is the world's first fully integrated dual constellation network enabled RTK rover system. It is an all-in-one handheld GNSS receiver and field controller featuring high-speed processor, increased memory, built-in camera and digital compass. Also integrated are an SD memory card slot, optional internal GSM or CDMA modem, and wireless connectivity via Wireless LAN and Bluetooth® wireless technology.

The GRS-1 achieves three primary and evolutionary goals for a GNSS receiver: small size, minimal weight, and affordability. It provides DGPS capability via an internal L1 antenna, perfect for the GIS and navigation space. Instantly move to centimeter RTK accurate dual frequency / dual constellation GNSS by simply adding a carbon-fiber pole with Topcon's PGA-1 external antenna then connect to your local GNSS network via the internal modem. As an added benefit, the GRS-1 can also be used as a static post processed receiver system.



HiPer Lite Plus

dual frequency static and RTK GPS system



GPS RECEIVERS

Shut out cable hassles and run up your productivity with the Topcon HiPer Lite +! Only Topcon lets you use the entire GLONASS satellite network, providing you with stronger solutions that can keep you working when others can't. Exclusive Advanced Multipath Reduction (AMR) and Co-op Tracking help you acquire sat-lock faster and maintain it longer in difficult working conditions. And because the HiPer Lite + is 100% cable-free, set-up is faster and there's no box full of cables to maintain — just precision GPS+ positioning at work for you!

HiPer Lite + Features:

- Super-fast and easy base station setup
- Cable-free rover with Bluetooth technology
- Integrated spread spectrum radio up to 2.5km
- No FCC licensing requirements
- 40-channel dual-frequency GPS plus GLONASS
- Exclusive AMR and Co-op Tracking technology

The secret to HiPer Lite is the advanced internal radio technology, developed by Topcon specifically for our GPS receivers, that allows us to create an integrated system that doesn't require the typical mess of cables. The advanced design incorporates a high performance 915 MHz Spread Spectrum radio that provides superior interference-free communication up to 2.5km on the job site. Combined with the center-mount antenna design, the HiPer Lite is a robust short range positioning system. HiPer Lite+ is not only free from cable hassles, it's also Lite on your wallet as well. Starting at a price well below a typical RTK GPS+ system, the Topcon HiPer Lite+ removes price barriers to provide affordable



Standard Package Includes:

- HiPer Lite+ Receiver (OMB)
- 1 Hz Update Rate
- Co-op Tracking
- NMEA 0183 output
- User Defined Outputs
- MINTER Interface
- 2x RS232 Serial Ports
- 1x External Power Port
- Power and Data Cables



specifications

Tracking

Signal Signal GPS/GLONASS L1/L2 C/A and P Code & Carrier
WAAS/EGNOS

Channel 40

Cold Tracking <60 seconds

Warm Tracking <10 seconds

Reacquisition <1 seconds

Accuracy

Static 3mm + .5ppm horizontal, 5mm + .5ppm vertical

RTK/Kinematic 10mm + 1ppm horizontal, 15mm + 1ppm vertical

Physical

Enclosure Aluminum extrusion, waterproof construction

Dimensions 159 x 172 x 88 mm

Weight 1.65 kg

Color Topcon Grey/Yellow

Environmental

Operating Temperature -30 to +60 degrees Celsius

Storage Temperature -22 to +140 degrees Celsius

Humidity unknown 95%

Power

Internal Battery Li-ion, 4000 mAh, 7.4V x 2 batteries

Operating Time 14+ (10 TX) Hours

External Power 1 port(s)

Input Voltage 6 to 28 V DC, 2 minimum charge

Power Consumption 4.2 Watts

Battery Charger AC Adaptor

Communication

Bluetooth 1.1 comp.

USB 1.1 Version

Serial Port A/D port, 460800, 230400, 115200 (Default), 57600, 38400, 19200, 9600, 4800, 2400, 1200, 600, 300 Baudrate, RTS/CTS Flow Control, 7, 8 (Default) Length, 1 (Default), 2 Stop bit, None (Default), odd, even Parity

Key and LED

Key 3: on/off, Function, Reset

LED 2x 3-color status indicator LEDs

Memory

Internal Memory compact flash card

Capacity up to 128 MB

Logging Time 53 Hours

HiPer II

dual frequency static and RTK GPS system



HiPer II – The Next Generation Dual Frequency GNSS Receiver

Topcon raises the industry standard once again by presenting the next-generation of the world's most popular receiver system – the HiPer II. Smaller, lighter, faster, more affordable: the HiPer II receiver is designed on these clear-cut concepts. This state-of-the-art receiver not only offers further enhanced agility, but also increases receiver performance and user-friendliness as well as the fully customizable structure providing our customers with the maximum flexibility to choose the system options they require.

Internal GSM/CDMA Modem for Network RTK
Designed as a perfect network RTK rover, the HiPer II gives you the option of an internal GSM or CDMA cellular modem. With its completely integrated design, the HiPer II eliminates the hassles of external modems and cables, all in a lightweight, rugged design.

Voice Messages for Receiver Status
Multi-lingual, clear-tone voice messages notify the users of critical receiver information and status such as satellite signal interruption, radio interference, low battery, low memory and more. This feature improves your efficiency by providing information without having to look at the LED display or controller screen.

Long-Life Li-ion Battery
Topcon's HiPer II comes standard with a modern design long-life Lithium Ion battery that is located safely behind a sealed battery cover.

Data Storage with SD or SDHC Cards
A large volume of static observation data from long term survey projects, long sessions and displacement monitoring can be stored onto the popular SD cards or SDHC cards with 4GB or larger capacity.



Features:

- * Smaller. Lighter. Faster. More Affordable.
- * Integrated GPS+GLONASS RTK & Static Receiver
- * Rugged, Lightweight, Magnesium Alloy Construction
 - * Cable-free Bluetooth Wireless Operation
 - * Optional integrated SS or Digital UHF Radio
 - * Optional integrated GSM or CDMA Modem
- * Bright, easy-to-read LED Panel
- * Voice Messages for Receiver Status
- * SD/SDHC Memory Card Slot
- * Removable Li-ion Battery

specifications

TRACKING CAPABILITIES

Number of Channels 72 Universal Channels
Tracked Signals GPS L1 CA, L1/L2 P-code, L2C, GLONASS L1/L2 CA, L1/L2 P-code, SBAS WAAS, EGNOS, MSAS

POSITIONING ACCURACY

Static L1+L2 H: 3mm + 0.5ppm V: 5mm + 0.5ppm
L1 only H: 3mm + 0.8ppm V: 4mm + 1ppm
Fast Static L1+L2 H: 3mm + 0.5ppm V: 5mm + 0.5ppm
Kinematic L1+L2 H: 10mm + 1ppm V: 15mm + 1ppm
RTK L1+L2 H: 10mm + 1ppm V: 15mm + 1ppm
DGPS <0.5m

USER INTERFACE

Operation Single-button operation for power, receiver reset
Display Panel 22 LED status indicators

DATA MANAGEMENT

Memory Multi-lingual voice messages for receiver status information
Data Format RTCM SC104 2.1/2.2/2.3/3.0/3.1, CMR, CMR+, NMEA
Update/Output Rate 1Hz, 5Hz, 10Hz, 20Hz options
Communication Port RS-232C (4,800 to 115,200bps)

WIRELESS COMMUNICATION

Bluetooth® Modem V2.1 + EDR, Class 1, 115,200bps
UHF Radio Internal, receiver (RX) and transmitter (TX), 410 to 470MHz
Spread Spectrum Radio Internal, receiver (RX) and transmitter (TX), 915MHz
GSM/CDMA Modem Internal

ENVIRONMENTAL

Dust/Water Protection IP67 (IEC 60529:2001) at closing all connector caps
Protected against temporary immersion up to 1m (3.3ft.) depth
Shock 2m (6.56ft.) pole drop
Operating Temperature HiPer II receiver -40 to +149°F (-40 to +65°C)
Radio/GSM modems -4 to +131°F (-20 to +55°C)
Storage Temperature -49 to +158°F (-45 to +70°C)
Humidity 100%, condensing

PHYSICAL

Enclosure Magnesium alloy housing
Size 7.24" Diameter x 3.74" Height (184mm Diameter x 95mm Height)
Weight HiPer II receiver 2.43 lb. (1.1kg)
BDC58 6.9 oz. (195g)
Radio/GSM modems 4.1 to 8.2 oz. (115 to 230g), depending on modem specifications

POWER SUPPLY

Standard Battery BDC58 Detachable, Li-ion rechargeable battery, 7.2V, 4.3Ah
Operating Time at 68°F (20°C) >7.5 hours in static mode w/Bluetooth®
Charger CDC68 Recharging time Approx. 4 hours at 77°F (25°C)
Input voltage 100 to 240V AC (50/60Hz)5
External Power Input Voltage 6.7 to 18V DC



GR-3

G3 triple constellation GPS receiver

Topcon's GR-3 with its wide array of advanced design features is truly a revolutionary receiver—two steps ahead of any other receiver technology available! advanced technology precision GPS+.



Topcon's GR-3 receiver, the next generation of system design and tracking technology, is now available with a completely new digital UHF radio system utilizing DSP technology. This technological advancement delivers far greater reliability and performance than older analog UHF technology of the past and sets new standards for performance, accuracy and innovative design.

GPS receiver design has taken a quantum leap forward with the new GR-3. It starts with 72 "universal" channels that support all current and planned satellite positioning signals. Then there's the micro-tuned, precision antenna capable of receiving all G3 positioning signals with Topcon's patented center-mount radio antenna for superior signal tracking and interference reduction.

The GR-3 receiver incorporates a unique dual communication system, featuring both cellular and radio technology. Offering a 915 MHz Spread Spectrum internal Tx/Rx* or Digital UHF radio, the GR-3 can serve roles as either an RTK base or rover system. And by utilizing the optional internal GSM/GPRS modem communication system via the easily accessible cellular SIM card slot, a user can extend their range far beyond radio capability or utilize both receivers as rover systems off a fixed base station or a network system.

It is the World's First G3 (GPS, Glonass, Galileo) capable GNSS receiver, and a clear indication of Topcon's technology leadership in the satellite positioning industry!



GR-3 Features:

- Digital UHF or Spread Spectrum radio
- Advanced Rugged System Design
- Optional Internal GSM/GPRS Cellular Communication
- 72 Universal Tracking Channels
- Bluetooth Wireless Technology
- G3 Satellite Tracking (GPS, Glonass, Galileo)

GR-3 Base and Rover Kit:

- 2 GR-3 915
- 4 Rechargeable Batteries
- 2 Alkaline Battery Packs
- 2 Smart Battery Chargers
- Fixed Height Tripod
- 2m Grade Pole
- Dual Unit Carry Case

Standard:

- Full GPS L1, L2, C/A code, P code and L2C code signal tracking
- RTK 5Hz position and raw observation output
- Advanced Multipath Reduction
- Co-Op Tracking
- Cinderella Functionality
- All data and comm. ports active

Optional Upgrades:

- GPS L5 Tracking
- GLONASS L1, L2 Tracking
- GALILEO Tracking
- Add GSM Modem
- VRS Enabled
- RTK 10Hz
- RTK 20Hz



specifications

Tracking

Signal GPS/GLONASS L1/L2/L5 C/A and P Code & Carrier, Galileo E 1/2/5a and L1, WAAS/EGNOS

Channel 72

Cold Tracking <30 seconds

Warm Tracking <5 seconds

Reacquisition <1 seconds

Accuracy

Static 3mm +.5ppm horizontal, 5mm + .5ppm vertical

RTK/Kinematic 10mm + 1 ppm horizontal, 15mm + 1 ppm vertical

Physical

Enclosure Magnesium I-beam Housing, Waterproof construction

Dimensions W: 158 x D: 158 x H: 234.5 mm

Weight 1.78 kg

Color Topcon Grey/Yellow

Environmental

Operating Temperature -20 to +50 degrees Celsius

Storage Temperature -20 to +35 with batteries

Waterproof IP66

Drop 2 m

Power

Internal Battery 2 Li-Ion, 3900mAh, 7.2V

Operating Time 14 Hours

External Power 1 port(s)

Battery Charger Dual Li-Ion "Smart" charger with optional Alkaline battery pack. Charger doubles as external power source

Communication

Bluetooth Bluetooth standard 1.2

USB 1.1 Version

Key and LED

Key Two keys, Power ON/Off and Function Start/stop data logging, switch to extended information mode

LED 6, one for receiver status, data recording indication, TX/Rx, Bluetooth status and 2 for indication of each battery charge level

Memory

Internal Memory Environmentally protected, removable SD™ media card slot

Capacity 1024 MB

Connectors

External Power Port 1 port(s), DC Jack Type A ODU

External Antenna Connector reverse Tnc/bnc modem connector

SD Card Slot 1 slot, Memory I/O

Serial Port 1 port(s), RS232 ODU



GR-3 G3 ENABLED GNSS RECEIVER WITH ADVANCED GPS+ TECHNOLOGY



INCLUDES:

- 2 GR-3 RECEIVERS
- CHARGING CRADLES/DATA CABLES
- HARD SHELL CASE
- HD FIXED HEIGHT TRIPOD

OPTIONAL ACCESSORIES:

- FC-100/200/2000 CONTROLLER WITH TOPSURV GPS+
- TOPCON TOOLS POST PROCESSING SOFTWARE

The GR-3 is the next generation RTK GPS system from Topcon. This exciting new system incorporates G3 tracking technology to track all three satellite positioning systems as well as new design features not found in any other system.

FEATURES:

- G3 TRACKING 72 UNIVERSAL CHANNELS
- TRACKS GPS, GLONASS, GALILEO
- HOT SWAPPABLE LIION BATTERIES
- COMPLETELY CABLE FREE DESIGN
- WIRELESS DATA COMMUNICATION (BLUETOOTH)
- 915MHz SPREAD SPECTRUM RADIO
- DURABLE MAGNESIUM HOUSING
- I-BEAM CONSTRUCTION FOR ADDED STRENGTH
- ENVIRONMENTALLY SEALED PORTS
- SD MEMORY CARD COMPATIBLE
- QUICK SNAP POLE MOUNTING SYSTEM

Built to withstand a 2 meter drop the GR-3 receivers will hold up to the toughest job sites.

Perform RTK or static surveys with speed and accuracy.



Specifications:

Tracking

#ofChannels 72 universal channels

GPS L1,L2&L5 carrier

Glionass L1,L2&L5 carrier

Galileo E2-L1-E1,E5,E6

WAAS Yes

Accuracy

RTK H-10mm V-15mm

PostProcessed H-3mm V-5mm

Communication

Radiotype 915MHz spread spectrum

Baserradio output 1.0 watt max

Cellular SIM card GSM/GPRS

Wireless Bluetooth 1.1

Environmental

Enclosure Magnesium I-beam

Operating temp. -20 to 50C

Env. specification IP66 water/dust

Shockrating 2 meter pole drop



Combine the GR-3 with a Topcon FC- series controller with Bluetooth wireless, and perform RTK topo or stakeout surveys cable free.

For static control surveys add Topcon Tools post-processing software for high accuracy traverse and network surveys.



Topcon GPS & Robotic Rentals

Clearly Machinery has the latest Topcon Robotic and RTK GPS Survey Systems available for rental.

Rates:
GPT-9000A Package
day - \$250.00
week - \$750.00
month - \$2500.00

Rates:
GR-3 Package
day - \$300.00
week - \$1000.00
month - \$3500.00



GPT-9000A SERIES REFLECTORLESS/ROBOTIC WIRELESS TOTAL STATION PACKAGE

INCLUDES:

- GPT-9000 TS WITH BUILT-IN RADIO
- RC-3 COMMUNICATION KIT
- FC-200 DATA COLLECTOR WITH RS-1 RADIO KIT AND TOPSURV SOFTWARE
- CARBON FIBER POLE WITH 6 PRISM

FEATURES:

- RADIO AND OPTICAL COMMUNICATION
- FAST AND DEPENDABLE TRACKING
- 2000 METER REFLECTORLESS RANGE
- WIRELESS DATA COMMUNICATION (BLUETOOTH)
- SPREAD SPECTRUM RADIO



GR-3 RTK GPS/GLONASS RECEIVERS

INCLUDES:

- TRACKING (GPS/GLONASS/GALILEO)
- 72 CHANNELS
- BLUETOOTH TECHNOLOGY
- RUGGED SYSTEM DESIGN
- HOT SWAPPABLE BATTERIES
- WIRELESS OPERATION

FEATURES:

PERFORM STATIC SURVEYS, TOPO AND STAKEOUT IN RTK MODE. COMPLETELY WIRELESS OPERATION WITH BLUETOOTH COMMUNICATION. WORKS WITH TOPCON AND TDS DATA COLLECTORS WITH BLUETOOTH OPTION.



DT-200 Series

digital theodolite

DT-205 DT-205L
DT-207 DT-207L
DT-209 DT-209L



DIGITAL THEODOLITE

The DT-200 series integrates the same high-quality advanced absolute circle reading technology found in Topcon's high-performance total station products for more accurate field calculations; and they continue to deliver the highest quality optics and electronics you expect to find in Topcon theodolites.

DT-200 Series features:

- * Long Battery Life
- * Waterproof and Dustproof Digital Theodolites
- * 633nm diode laser that can (L series)
- * be seen up to 50 meters away (L series)

Available in three affordable models delivering 5", 7", or 9" angle accuracy, there is a DT-200 theodolite perfect for any job. Like the DT-100 series, the DT-200 series weathers any wet or dust conditions in the field, allowing for a more productive day during inclement weather. All models are also compact and lightweight for easy portability; and their simple operation provides precise measurement in a functional, hassle-free package.



specifications

Telescope

Length 149 mm
Objective lens 45 mm
Magnification 30x power
Field of view 1° 30'
Resolving power 2.5 power
Minimum focus 90 cm
Stadia ratio 100
Stadia constant 0
Sighting collimator Double

Electronic Angle Measurement

Method Absolute Reading
Detecting 2 horizontal sides, 1 vertical sides
Minimum reading 1"/5" arc seconds, 0.2mgon/1mgon mgon
Accuracy 5 arc seconds, 71mm Diameter Circle

Display

sides 2 - LCD 7 segments

Data Output

Serial signal connector RS-232C

Compensator

Tilt sensor Vertical
Compensating range ±3 ft

Optical Plummet Telescope

Magnification 3x power
Field of view 3° degrees
Level Sensitivity
Plate level 40° /2mm
Circular level 10° /2mm

Water Protection

Standard IP66 rating
Power Supply
Battery 4AA batteries

Operating time

Theodolite only 140 Hours
Environmental
Operating Temp -20 to +50 degrees C



AT-B and DL Series

automatic and digital levels

AT-B2
AT-B3 DL-502
AT-B4 DL-503



AT-B2

Utilizing a finely tuned magnetic damping system, AT-B series automatic levels quickly level and stabilize the line of sight. These precision instruments ensure reliable leveling even when working near heavy equipment or busy highways where fine vibrations could be present. The automatic levels feature IPX6 protection against powerful water jets from all directions and are fully resistant to driving rain and splashing water.

Horizontal angles can be directly read in 1° or 1 gon units. Free rotation feature allows you to read any angle from zero. The circle is covered for protection against dirt and scratch. The readout window is located below the eyepiece for quick reading.

AT-B Series Features:

- * Durable, Dependable, High Value Auto Levels
- * 3 Models - 32x, 28x, and 24x Magnifications
- * Rapid, Accurate, and Stable Automatic

Compensation

- * Ultra-Short 20cm (7.9 in.) Focusing
- * All-Weather Dependability
- * Clampless, Endless Fine Horizontal Adjustments

DL-502 / 503 – Electronic Digital Level

World's First "Wave-and-Read" Technology

Topcon DL-500 series digital levels maximize work efficiency and minimize human error, providing consistent measurement precision and speed, regardless of operator skill. Incorporating cutting-edge Random-Bidirectional (RAB) coding technology, an optimized digital processing algorithm, the DL-500 provides exceptional measurement accuracy, stability and speed, under a variety of environmental conditions. Even when the staff surface is partially shaded, or in dim lighting conditions as low as 20 lux, a single button triggers measurement and the DL-500 instantly provides reliable results. The world's first "Wave-and-Read" technology provides an additional survey style option that allows a rod operator to wave the staff forward and back, instead of keeping the staff plumb. This simpler method is faster, easier, minimizes the fatigue and is just as accurate.

Pre-installed measurement programs assist various leveling tasks and accompanied calculations. Internal memory stores field data, and can be directly transferred to your computer via serial cable, eliminating human error.



DL-503

Motorola XTN series

dependable, durable communication



MOTOROLA

TWO WAY RADIOS

Meet the next generation in two-way radios, featuring state-of-the-art technology from the company that's been the leader in two-way radio technology for over 70 years. If getting your job done means communicating with others at your job site, the Motorola XTN Series Professional two-way radios can help you work smarter and faster.

Rugged - the XTN series is not just weatherproof, shockproof and drop-proof, but designed to meet MilSpec810, and IP54 standards.

Battery Life - the XTN NiMH rechargeable battery lasts up to 15 hours, so it can handle extended shifts without recharging. The XTN can also accommodate AA batteries.

Audio Quality - the XTN series offers better audio quality than what we had in the Spirit M-Series, thanks to newly designed chip and optimized acoustic cabinet that provides clearer audio at higher volumes.



The XTN Series single channel model

- Available in 1W and 2W models
- VHF and UHF frequencies
- MilSpec810 IP54
- RSSI signal strength
- 121 total privacy codes
- LCD display
- Battery gauge
- Cloning capabilities
- Manager lockout

All XTN Radios come with antenna, Ni-MH rechargeable battery, belt clip, wall charger, warranty card and user manual.



Features:

- Ultra compact size (5.0 x 2.5 x 1.38")
- 9.9 ounces
- Audio accessory jack
- 27 VHF frequencies
- 56 UHF frequencies
- 38 PL codes - 83 DPL codes
- Range up to 2 miles in open areas
- Range up to 20 floors (250,000sq.ft.)
- 1 year replacement warranty

XTN SERIES MODELS:

- XV1100 - 1 watt 1 channel VHF
- XV2100 - 2 watt 1 channel VHF
- XU1100 - 1 watt 1 channel UHF
- XU2100 - 2 watt 1 channel UHF

ACCESSORIES:

- NTN8971BR NiMH battery pack
- NNTN4077 AC wall charger
- 53875 Drop-in quick charger
- 53862 Remote speaker microphone
- 53865 Headset with microphone
- 53866 Earpiece with microphone
- MR7000-200 Leather carrying case
- MR7000-CAO Nylon carrying case



Chicago Steel Tape

dependable, durable metal detectors

MAGNETIC LOCATORS

Improved water resistance and mechanical life are provided by our new direct contact switching with the PC board. Enjoy enhanced functioning, reliability, and maintenance for all CST locators.

Our Magna-Trak magnetic locators include a multitude of convenience features you won't find anywhere else; features like an LCD visual display and/or audio tone, a lightweight, easy-grip design, and water resistant cases.

Magna-Trak locators also feature easy battery access and outstanding battery life, and they're backed by a 5-year warranty! Plus, our patented* electronic balancing procedure allows balancing to be done quickly and efficiently and all of our manufacturing is done right here at CST to ensure quality control.

Magna-Trak® 200 Series

All the features needed in a magnetic locator, ergonomically designed for complete one-handed operation.

Large LCD Display

- * Digital readout and bar graph allow you to locate visually
- * Used with audio tone allows for pinpoint accuracy, even in congested search areas
- * Segmented battery level indicator means no power loss surprises
- * Indicator cautions when detecting a power line

Erase Function (MT202 Only)

- * Lets you block out interference from a magnetic disturbance (such as a nearby fence)

Membrane Switch

- * Lets you adjust volume and sensitivity with the same hand that holds the locator
- * No mechanical controls – membrane is sealed from dust and moisture

Magnetic Speaker

- * Enhanced to produce a richer tone for easier locating.

Engineered Body

- * Lightweight (only 3 lbs.)
- * Water-resistant housing permits use in the rain
- * Ergonomic handle with textured grip



Magna-Trak® 100

The Original! The **Magna-Trak 100's** LCD indicator offers a digital bar graph display, in addition to a standard audio tone, to precisely identify the target object, especially in noisy, congested areas. An additional feature is a visual reminder when batteries are low.

The lightweight **Magna-Trak 100** features simple, waterproof bottom, push-button membrane pad operation with an ergonomic design. The **Magna-Trak 100** offers easy battery access and outstanding battery life, and is backed by a five-year warranty.



Magna-Trak® 101

The Value-Priced Standard! Our low-cost **Magna-Trak 101** magnetic locator provides excellent field performance at a budget price! It features quick-action, control knob operation to adjust sensitivity and volume.

The **Magna-Trak 101** magnetic locator is a streamlined version of the Magna-Trak 100. Features all the same components as the **Magna-Trak 100**, minus the LCD meter display and membrane switch. The operation of this locator is dependent upon only two rotary control knobs: sensitivity and volume.

Magna-Trak® 102

Feature-Packed for Versatility! The **Magna-Trak 102** magnetic locator provides the same basic performance features as the Magna-Trak 100. However, with the addition of our push-button "erase" feature, greater flexibility is achieved and performance is enhanced.

When a magnetic disturbance, such as a metal fence, is confronted, simply press the "erase" button and the disturbance is erased for continued searching without interference. No need to reduce the sensitivity; the **Magna-Trak 102** always returns to perfect magnetic balance when the "erase" button is pressed.

The **Magna-Trak 102** locator also includes a power line indicator feature. The LCD panel visually indicates that a power line is present. CAUTION: This feature is an aid only and is not intended for locating buried power lines.



Schonstedt

dependable, durable metal detectors

MAGNETIC LOCATORS

Schonstedt Magnetic Locators

- Unmatched sensitivity allows you to find what you're looking for quickly, without the risk of passing over your target.
- Our locators last 100% to 250% longer than others, making your investment a solid one.
- 85% of the Surveyor market can't be wrong.

All Locators Feature:

- * Seven Year Warranty
- * Enhanced target definition
- * Unsurpassed detection range
- * Piezoelectric speaker
- * Clear, sharp, detection signal pinpoints the target
- * Five individual sensitivity settings
- * No response to aluminum, brass, or copper
- * Ease of operation reduces search time
- * With experience, user can distinguish between small pieces of scrap iron and actual targets
- * Modular construction
- * High performance components
- * Weather protected controls
- * Rugged lightweight case
- * Patented HeliFlux® sensors



GA-52Cx Specifications

Input Power - Two alkaline 9-volt batteries
Battery Life - 40 hours (intermittent usage)
Output - Approximately 40 Hz audio tone on speaker. Tone frequency increases or decreases with gradient-field intensity.
Weight - Approximately 2.5lb. (1.13 kg.)
Operating Temp - -13° to 140°F (-25° to 60°C)
Overall Length - 42.3 in. (107.4 cm)
Waterproof Length - 34.5 in. (87.6 cm)
Nominal Sensor Spacing - 20 in. (50.8 cm)
Construction - Modular, all solid state



GA-72Cd Specifications

Input Power - Two alkaline 9-volt batteries
Battery Life - 40 hours (intermittent usage)
Output - Approximately 40 Hz audio tone on speaker. Tone frequency increases or decreases with gradient-field intensity.
Weight - Approximately 2.5lb. (1.13 kg.)
Operating Temp - -13° to 140°F (-25° to 60°C)
Overall Length - 42.3 in. (107.4 cm)
Waterproof Length - 34.5 in. (87.6 cm)
Nominal Sensor Spacing - 20 in. (50.8 cm)
Construction - Modular, all solid state



GA-92XTi Specifications

Output - Audio Signal increases in frequency with gradient-field intensity. Idle frequency = 10 Hz
Visual - Expanding bar graphs indicate polarity (+ or -) and relative strength (GA-92XTd model only)
Battery Life - 24 Hours (intermittent usage)
Input Power - One lithium 9-volt battery
Battery Check - 4-segment LCD BATT indicator
Weight - Approximately 2.4 lb. (1.1 kg)
Operating Temp - -13° to 140°F (-25° to 60°C)
Overall Length - 26 in. (~66 cm) (when extended)
 15.5 in. (~39 cm) (when collapsed)
Waterproof Length - 11.5 in. (~29 cm) (when extended)
Nominal Sensor Spacing - 9.5 in. (~24 cm)
Construction - 30% glass-filled, high impact ABS, .2 in (~5 mm) wall thickness



Survey Supplies

FIELD SUPPLIES

We stock a complete line of Surveying accessories and Field Supplies. Stop by and pick up your supplies from our South Bound Brook location, or we can ship your orders via UPS usually within 24 hours.

Plumb Bobs
Gammon Reels
Flagging Tape
Stake Flags
Marking Paint
Keil and Markers
Mag Nails
Field and Level Books

Oak Stakes, Hubs and Lath
Rebar



Measuring Tapes
Steel
Fiberglass
Power Tapes
Folding Rulers

Level Rods
Fiberglass
Lenker

Hand Tools
Machette
Hammers
Bush Axe
Manhole Hook

Safety Equipment
Vests
Cones
Hard Hats
Warning Signs

